ROAD and TRACK

35 cents

Vol. 3, no. 6

JANUARY, 1952

TO BY JACK CAMPBELL

SEE PAGE 17

The Motor Enthusiasts' Magazine

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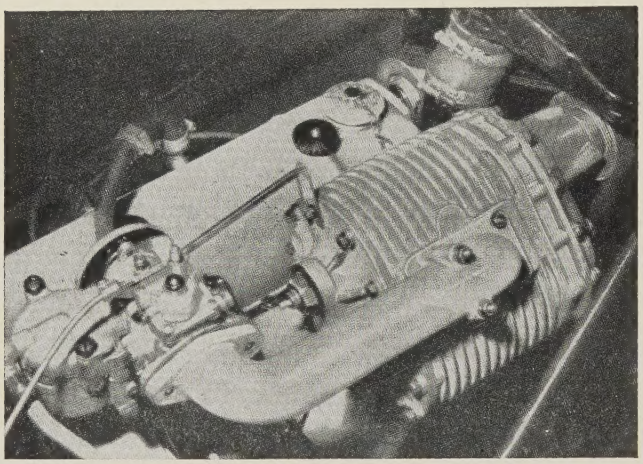

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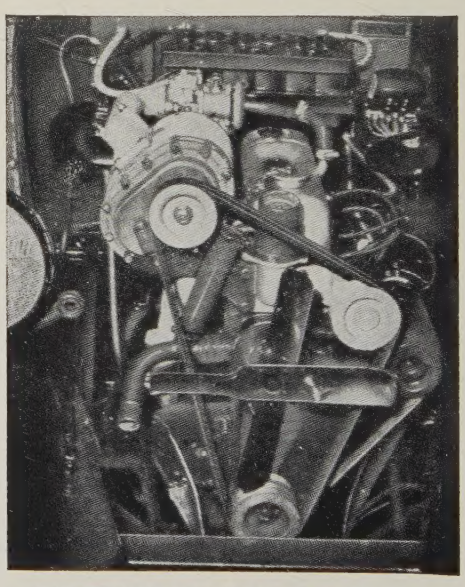

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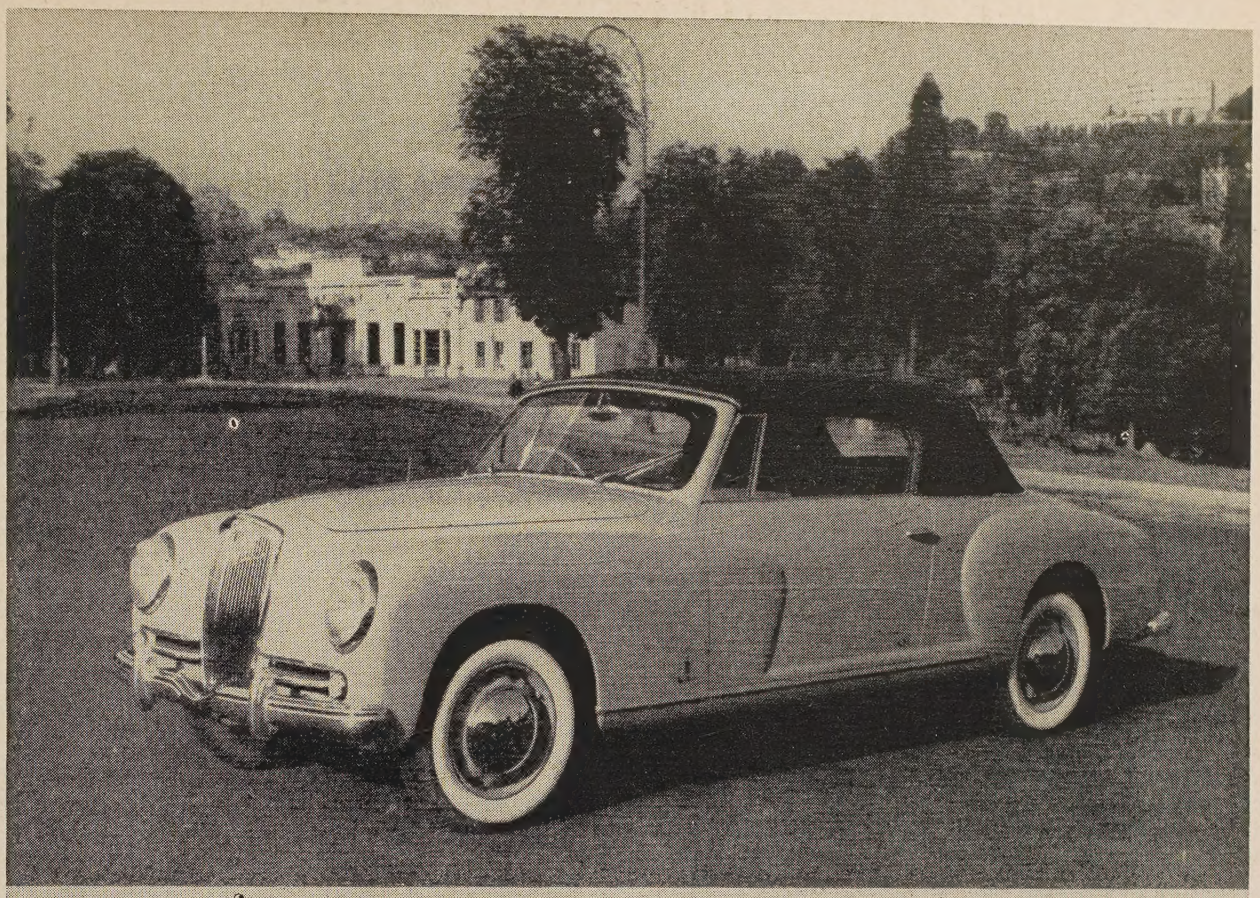

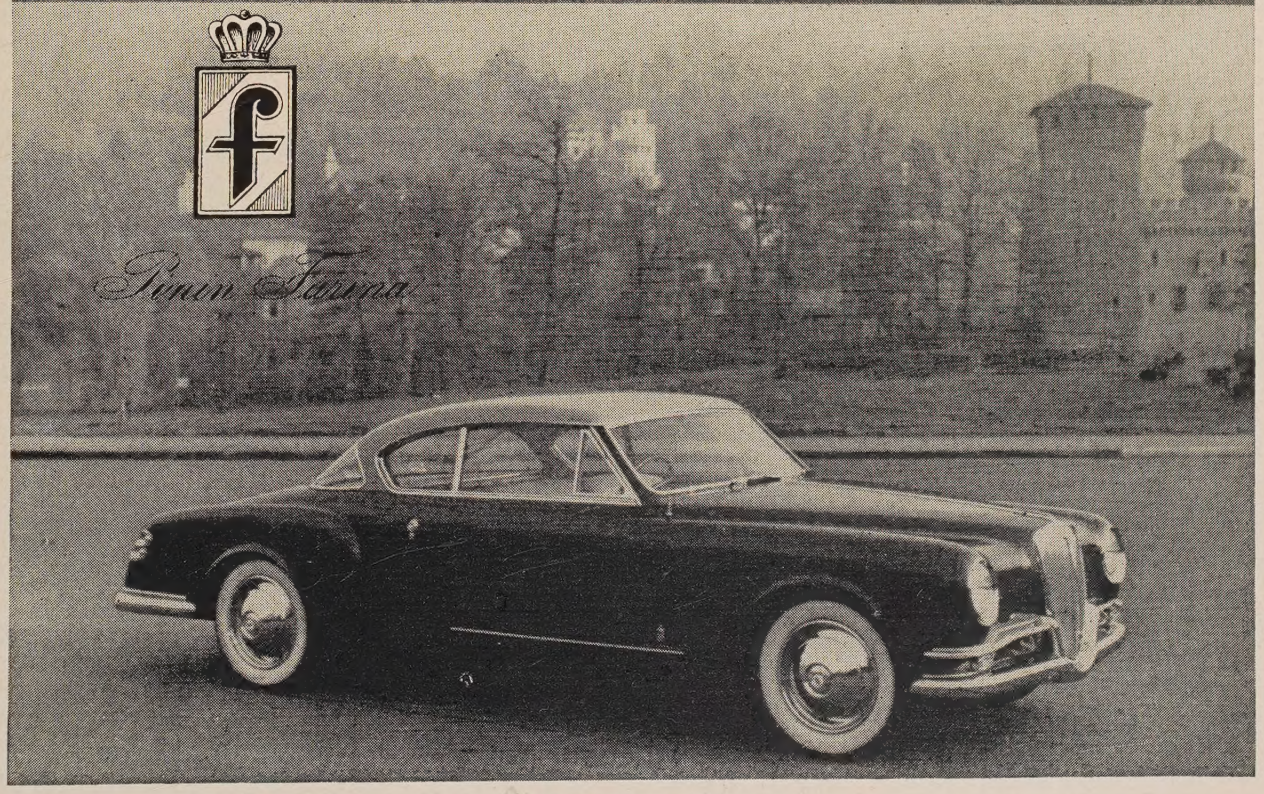

LANCIA AURELIA

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CORSO TRAPANI, 107-115

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CORRESPONDENCE

THAT'S MORE LIKE IT, HOGWELL - BUT, I SUGGEST MOVING THE ENGINE FORWARD 6 INCHES — ADD 2 CONE CLUTCHES TO OUR PATENTED "DYNASLIPHOD TRANSMISSION," AND PUT IN ANOTHER TINFOIL X-MEMBER — RIGHT ?
RIGHT, J. J.!!
HA!! THE NEW BODY DESIGNS, EH, SLOPFARB? ER-YOU HAVEN'T SEEN HOGWELL'S CHASSIS, HAVE YOU?
NO, J. J.
GOOD!! CAN'T HAVE MY BOYS CONFUSED BY IRRELEVANT TRIVIA!!
NO-NO!! SLOPFARB-WE MUST HAVE MORE OVERHANG - AND, CUT THE HEIGHT 4 INCHES - SHORTEN THE WHEEL-BASE TO 110 - AND - HMM!!! - 85-86 CHROME BANDS - THAT'S GOOD!! - - BUT-BUT-SPUTTER!! CENSORED!! IT - WHAT'S THIS? - A REMOVABLE FENDER!! WHY-YY- !!@ ※ @★
'NIGHT TOM!! — BY GAD!! THESE ENGINEERS HAVE NO CONCEPTION OF WHAT THE BUYING PUBLIC WANTS!! I HAVE TO LEAD THEM BY THE HAND!!
ACME CAR CO. OF DETROIT
GR-RIND!! CLASH!!
BWOOM!!
BWOWWM!!

DETROIT KOMIKS

The enclosed 4 panel thriller is my idea of what must be going on in Detroit.

The tycoon typified is **not** Buick's Chayne, whose Type 41 Bugatti is slightly larger than the Type 37 in the cartoon.

I drive a 4-seater MG. When boobs ask me if I feel funny in such a small car, I reply that I rise above it. I can be seen almost any day, rising above my MG . . . if the road is at all rough.

Formerly, I drove a large car which was extremely comfy when it was not bububububing sidewise off the road. I do not miss it, nor do I long for its 9 miles per gallon thirst.

I might be called a foreign car enthusiasts, but that is not exactly so. A man would be a fat-head to put up with the banditry of foreign car sales dens, and put up with walking to work for two weeks at a stretch, because some silly little $3.60 part is 3200 watery miles away . . . IF he could buy an American car which gave him beautiful functional styling, fine workmanship, and inspired steering and road holding.

Here's to a "ravolution" in Detroit. Chrysler COULD give us styling like the Jaguar . . . Ford MIGHT try for road manners like the Bugatti . . . who knows . . . maybe the almighty American Woman might grow to like such things.

Detroit builds the world's most reliable perambulating sofas. Why not a few cars?

Somerville, Mass. Harvey Francis Curtis

SAOUTCHIK-TALBOT TOP BUILDERS

I had the pleasure of designing the hard top for the Saoutchik-Talbot coupe featured on the Dec. issue cover. Construction was all hand work . . . started on the windshield by raising it 2" higher, next re-did doors for a hard top . . . framing of hard wood and steel. Metal was formed by air hammers, hand work and jigs. Special jigs were made for the rear chrome pieces around outside and inside of windows. Top was primed at least 8 times and about 25 coats of lacquer applied. We have been in business for some 62 years and are not just a body works in the **Northland,** but a very well known body construction plant.

Spokane, Washington Robert E. Halstead
Novelty Carriage Works

"HAW" SAYS YANK IN ARABIA

I'm strictly a rabid motorcycle fan, so I just couldn't resist the chance to rank you about the Freiburg Hillclimb . . . specifically, one Zeller on BMW (2-wheel type natch!) blowing off everything to set a new record previously held by Auto-Union 600 hp! Permit me to state quote HAW unquote.

Dhahran, Arabia Bob Degray

PUKKA, PUKKA, PUKKA

When you come right down to it, **R & T** is a pretty sad excuse for an automobile magazine. When it is not completely immersed in the momentous affairs of the land of beauty, culture, and genius (Southern California), it is ranting editorially on some of the most pointless and/or impractical ideas known to man (remember Kaiser and the Cisitalia?). The correspondence columns contain little but positive opinion of the "adjectival ignorance school." I found it merely harmless sophistry when you emulated the British in manner and diction (why, in Heaven's name?), but when you managed to work in the term "pukka" three times in one issue, matters got out of hand! There was an Elizabethan saying that "An Englishman Italianate is a devil incarnate." What, then, is an Anglified (if there is such a word) American? And if **R & T** was Anglified before, what will be the result of Jennings' visit and subsequent articles? It is, I think, possible to enjoy the better qualities of an MG or a Jaguar without adopting clipped diction and trim moustache.

Berkeley, Calif. A. H. Frietzsche

CROWD CONTROL . . . A SPECTATOR

It is no longer a case of simply saying something should be done, sometime, by someone about crowd control. Let's face facts; it is time the promoters of the various Road Races get off their dead duffs and do some organizing. The sport is no longer an outing for a few "Club Members," but has grown to be a public recognized exhibition.

The recent Palm Springs Road Race was undoubtedly the most poorly organized and conducted event I have ever attended. There was absolutely no way anyone anywhere around the course could possibly know when the races were to begin or what was the reason for the long delay between events. Several times the crowd was informed the race would start in five minutes, and each time nothing at all happened. It is no wonder the crowd became restless and unruly. If a good P.A. system is not available, then why not shoot off an aerial bomb thirty seconds before the start of an event.

Another thing that was very uncalled for, was a joker in a Jaguar Coupe who kept flying around the track with his lady friends every few minutes. If he wanted to race, why didn't he enter properly and at least give the crowd a chance to get out of his way?

The motorcycle guards were absolutely useless in controlling the crowd. The crowd so clogged one escape road that if a car had gone out of control, people would have been splattered all over the landscape. Yet the guards did absolutely nothing to correct this situation—they were too busy shooting the breeze with their friends.

Eagle Rock, Calif. Bob Emmett

CROWD CONTROL . . . A STEWARD

Milt Traer [Correspondence, Dec.] and I were flagman and steward on the Hard Left of the Elkhart Lake race. Our jobs were to see that the crowd stayed where they should and see that the cars were intact as they passed. Unfortunately, the cars had to watch out for themselves as the crowd consumed most of our time.

Not all the spectators were such demons, many stayed in their places and yielded whenever asked. Others had to be threatened with assault, to put it gently. These, I know, had many names for me and referred to my ancestors in glowing terms, but they're still alive and I doubt if they would be if left to their own devices.

What Road Racing needs is more snow fencing and more big sergeants.

Oak Park, Illinois R. F. Murray

CROWD CONTROL . . . AN OFFICIAL

Just finished reading your article on the Watkins Glen Road Race and found it to be a fairly accurate account of the day's events. However, one observation you made in this article irritated me considerably since it was inaccurate and extremely unfair . . . your statement that "some of the flagmen did seem a little confused and/or nearsighted."

The race officials estimated there would be roughly 150,000 to 200,000 spectators attending the race and the number one problem facing them was the safety of these people as well as that of the contestants. Accordingly, they spared no expense in installing the finest communications system in road racing history. The officials also realized that the future of road racing at Watkins Glen hung in the balance. Therefore, every effort was made to make the events as safe as it was humanly possible to do.

Their efforts were well rewarded since the 1951 race was the safest and fastest of them all. Much of the credit for this achievement should go to the flagmen and their associates.

Rochester, New York Fred A. German

Statement referred to flagman who gave right flags but to wrong cars and another who gave wrong flags to the right cars.—Ed.

MILE-O-METER, YES . . .

I was glad to read Sam Weill, Jr's. article on the Gale Hall "Mile-O-Meter" as I've been thinking about adding one of these to "Mona Lisa's" wardrobe for some time but have resisted until I could get a detailed performance report. Noticed that his TD bears a conglommeration of Clubbery upon the facade which makes my lonely Fiat 500 Club and Insurance Company badges look like orphans!

Jackson Heights, L. I., N. Y.
Robert Kevin Sutherland

MILE-O-METER, NO . . .

No! No! No! Don't put a Mile-O-Meter on your MG. Heavens to Betsy, do you want to take all the fun out of motoring in your little bolide? (oops, there's that word again.)

Now don't get me wrong. I'm not saying anything against this customized vacuum gauge. In fact, it's a great little instrument; but on an MG? Heaven forbid!

Now I'm all for putting one on that "thing" Detroit calls a car, but would you put sandbags on an elephant? Would you put pontoons on a duck? After all, the MG driver (average, that is) isn't concerned about that extra BPG (block per gallon) when he is running his sprightly steed thru the gears.

No, friends, don't torture yourselves by having to put up with a needle which incidentally will be needling you constantly. Just get in your MG, step on the gas and have yourself one helluva good time . . .

Colorado Springs, Colorado R. E. Davids

FAST AND LOW

The enclosed photo of our home-built sports roadster may interest you. Rear axle ratios are: 4.1 to 1 and 3.25 to 1. Acceleration in low ratio is from standstill to 60 mph in 6 seconds. My project partner, Robert Monroe, is a producer of radio and television shows "Take a Number" and "John Steel."

New York, N. Y.
Alex Dawydoft
Technical Editor—AIR TRAILS

ROBBINS ROBBED BY ERROR

It appears that in the Palm Springs Road Race you have Robbins, driving #19 standard Jaguar. Car #19 was driven by Jack Barrows, who had to retire from the main event because of clutch failure. Mr. Robbins was driving car #20 which finished in third place in the Second Event and in the Main Event was almost out of the race during the 33rd lap because of failure of axle seals, but because of his quick-thinking pit crew, was able to drive to completion of the race.

Palo Alto, California Irving W. Robbins, Jr.

ALL THE ACES

I agree with Mr. Perdue's comments on the Mexican road race. This year's casualty toll was not conductive to the sport in general at all.

I would recommend the return to strictly stock passenger cars, manufactured in sufficient volume so as to eliminate most of the hot European cars which are in essence nothing less than road racing machines.

The whole basis of this race I believe is to attract tourists of North and South America to Mexico. I would only make such a trip to see an automobile race, preferably one in which our cars held all the aces.

Grosse Pointe, Michigan Richard Russell

That would be a dull poker game.—Ed.

CORRESPONDENCE

HYDRAMATIC FOR ROAD RACING

I note in your write-up of Watkins Glen [November R & T] you say of my Cadillac-Allard, "the only fault was Hydramatic, which is unsuitable for road racing."

The Hydramatic itself gave no trouble whatsoever and was in perfect operating condition at the end of the race. The reason for my retirement on the next to last lap was that the stub axles from the rear end gears to the universal were improperly fitted at the Allard works. The taper of the axle did not make a full bearing with the hub (we discovered after the race) and the keys were loose in the keyways and sheared off completely, thereby effecting a complete loss of power in the rear wheels. Inasmuch as the shearing effect was gradual and the tapers galled up, the complete loss of power was not effective immediately and no doubt slippage took place before we lost power in the rear wheels all together. This may have caused spectators to blame the situation on an improperly functioning Hydramatic.

Another factor which made the car handle badly at times was the fact that at high speed the front end of the car tended to lift up, thereby reducing our 4.5° caster to negligible proportions. We shall correct this before the next race.

My double spin on Franklin Street and, of all places, in front of the Judges' Stand, was caused by my lack of experience in shifting the Hydramatic from high to low ratio. The ratio differential was almost 2 to 1 (as the unit was then set up) and I shifted at too high a speed, which threw the car into a spin. At lower speeds this shift can be accomplished successfully, and we are further changing the ratios to minimize any difficulties in this respect. In short, my spin was a pure case of pilot error occasioned by the fact the car was finished only four days prior to the race and I had not had sufficient experience in the matter of shifting.

My old black Allard was equipped with Hydramatic and appeared in only three races—finishing 3rd at Watkins Glen in 1950, 1st overall regardless of handicap in the 6-hour race at Sebring, and 2nd in the 100-mile race at Buenos Aires. The record speaks for itself.

To me, one of the basic advantages of the unit in road racing is the fact that both hands of the driver may stay on the wheel at all times and it is not necessary to worry about rpm synchronization, gear shifting, double clutching, and other factors normally encountered with a standard gear box.

I also understand that Irwin Goldschmidt's Allard now has Hydramatic and performed very successfully at Allentown until some other mechanical difficulty necessitated his retirement.

North Chicago, Illinois — Fred G. Wacker, Jr.

CHRYSLER VS. CADILLAC

I am writing in response to your recent article in the November 1951 Road and Track on the Chrysler 180 hp. In my opinion, this article is not up to par with tests already completed.

You should go to Santa Ana, California, where you see the real test of acceleration of stock cars and hot rods. The Cadillac, Oldsmobile and Chrysler are the fastest accelerators with the Cad holding the record up until recently when a Chrysler nosed the Cad out by the length of one wheel, setting a new record of 76.33—in ¼ mile run. I saw these two cars run thru about four times . . . it was first one and then the other that would make the best time. There again it would be no race with a Cadillac equipped with a dual intake manifold. And yet, you clearly state that you out-accelerated a Jet, a Jaguar. Why not the Allard? It will go from 0 to 80 in 13 seconds and the Jet right around that with a Jaguar two seconds behind.

I surely would not state that the Chrysler stock car will out-accelerate the Cad-Jet, Cad-Allard, Chrysler Cunningham or any Cad with dual pots.

Whittier, California — M. J. Stansbury

Stock Chrysler Saratoga (the one we tested) will out-accelerate the Muntz Cad-Jet but not a Cunningham, Allard, or well tuned Jaguar. XK-120 will take Jet (which will not do "right around" 13 sec. for 0 to 80).—Ed.

SALON PHOTO CREDITS

Jerry Chesebrough—Reno Road Race, Revolutionary TC, Morgan 3-Wheeler, Lost Boy. . . .
Dr. Vincente Alvarez—Mendoza Race
Bob Canaan—Driving Techniques
Maria Denker—Palm Springs Race (upper)
Felipe Turich—Palm Springs Race (lower)
Publifoto—World Champion
Peter Stengel—Styling

ROAD and TRACK

The Motor Enthusiasts' Magazine

ROAD AND TRACK 159 ALFA

The world's champion race car, the fabulous 159 Alfa, is being brought to this country for display by *Road and Track*. This 440 horsepower, 1866 pound Grand Prix car was clocked at 186 mph during the Spanish Grand Prix. Groups and organizations interested in displaying this car should contact us at once.

CRASH HELMET—SAFETY BELTS

Half-measures are seldom satisfactory . . . in the case of safety equipment they are totally inadequate.

Take crash helmets for example. Many substitutes such as helmets designed for football, polo, jet pilots, tank drivers, miners and motorcyclists have been seen in use at sports car and stock car races. Needless deaths have resulted because *only* a properly designed race driver's helmet can provide adequate protection. In the Carrera Panamericana, any type helmet was allowed . . . a driver wearing a football helmet died from brain concussion. Rules should specifically demand race driver's crash helmets and prohibit *all* others. Most drivers have only one head . . . they should protect it.

Too few people realize that there are two distinct types of aircraft safety belts . . . (1) pilots' safety belts, designed for crash protection, and (2) passengers' "safety" belts, designed for security during rough flight or a bumpy landing. Only the pilot's safety crash belt is adequate for protection in automobile racing. Furthermore, even the best belt is no better than its attachment . . . which should be directly to the car's frame.

Good fire extinguishers are not expensive but may easily save a valuable car or an even more valuable life. Some rules allow the extinguisher to remain in the pit . . . what good would it do if the fire broke out on the back stretch of a three-mile circuit? There should be one in *both* the pit and the car.

Safety at *any* price is a bargain.

January, 1952 — Vol. 3, No. 6

CONTENTS

Henry J Road Test 4
Mexican Road Race 6
Barcelona Grand Prix 8
Technical Correspondence 9
Riley Road Test 10
You Saw Them In 12
Jaguar Cooling Modifications 14
General Hints on Hopping Up 16
Salon—Reno Road Race 17
Revolutionary TC 18
Morgan Three Wheeler 20
Mendoza Sports Car Race 22
Driving Techniques 24
Palm Springs Road Race 26
Reno Road Race 27
World Champion 29
Styling 30
Lost Boy 31
Steering Phenomena 33

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McCAHILL'S NEW BOOK

Enclosed please find a copy of my new Sports Car book. I am sending it to you to be the first to point out a few ring-tail whoppers that got between the covers in a couple of places, due to wildcat enthusiasm on the part of some of Fawcett's eager beaver editors. For example: —On page 87 you may note (as I am scared to death many readers will) the fantastic statement that Cunningham's car can go 190 and reach 150 from a standstill in two city blocks! The entire book is my fault except for the work on this page which I never saw before it appeared in its present form. Cunningham denies the figures and I'm left holding the bag.

There are other little items like calling Ferrari "Fary"—which is all right with me if he doesn't mind—and which had the Locomobile No. 16 win the Vanderbilt cup race two years ahead of time. Hope you can overlook these and some other dillies and find the offering reasonably readable.

Glen Gardner, New Jersey — Tom McCahill

Gad, Tom, your book is a lulu. Should sell like hot cakes. Will review it next month.—Ed.

EXPERTS DISAGREE

We have not only trouble concerning the definiton of what constitutes a "sport car" but now comes another conflict.

Tom McCahill in M-I on the East Coast claims that the Aston Martin is "for the birds," while Phil Hill in R & T on the West Coast claims it to be the best ever.

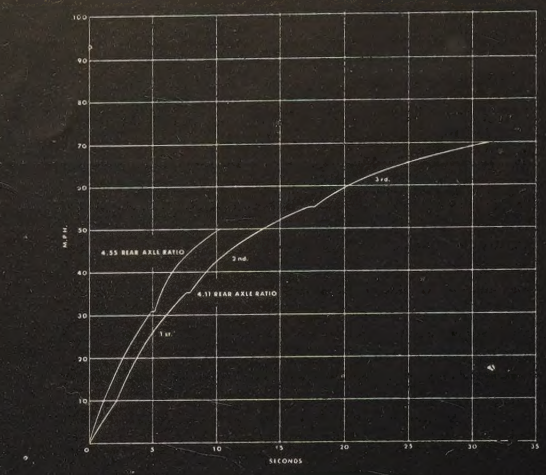
What are we, the "shift-less" American public, going to do when the experts cannot agree?

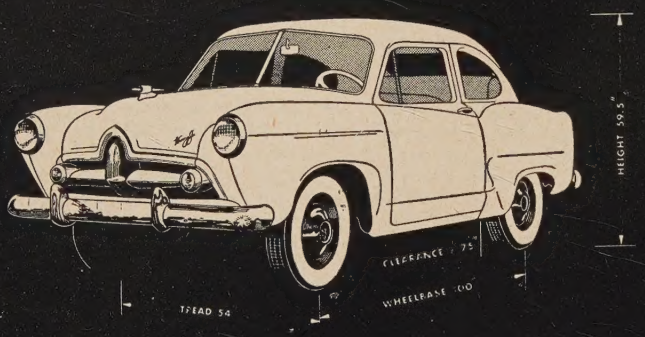
Dallas, Texas — J. G. Harriss

Enjoy McCahill's superlative humor and take Phil Hill's advice.—Ed.

ROAD and TRACK ROAD TEST No. A-4-51

Henry J 6





SPECIFICATIONS

Arrangement and number of cylinders	6 in line
Valve Arrangement	L head
Compression ratio	7.0:1
Horsepower	80 at 3800 rpm
Torque	133 ft. lb. at 1600 rpm
Bore: 3.125, Stroke: 3.50, Displacement: 161 cu in.	
Transmission: 3 speed with overdrive, standard 3 speed also tested	
Dry Weight	2400 lb.
Overall Length	174.5 in.
Overall Width	70 in.
Number of Seats	3 front, 2 rear

PERFORMANCE

Standing ¼ mile	22.7 sec.
Flying ¼ mile:	
Upwind	77.5 mph
Downwind	82.6 mph
Average	80.1 mph

SPEEDOMETER

Actual Speed	Speedometer
39.0	40
56.6	60
76.9	80

For some months *Road and Track* has been off-handedly touting the virtues of a much under-rated and (we think) wrongly publicized American product: Kaiser-Frazer's baby—the Henry J.

November 1950 *Road and Track* carried a rather awe-struck report of several drivers' impressions of the then new car—which was so new few people knew what kind of car it was. Our staff put its greatly surprised stamp of approval on the car. It was accelerated, cornered and braked to the limit.

Road and Track and those associated with the driving impressions came away from the little car thoroly sold. It was felt that here was the car the average American had been pleading for—the workingman's car, the model of 1950, the white hope of a Detroit bogged down in the blind production of (as one frustrated driver recently put it) upside-down bed-pans. And *Road and Track* sat back and waited for you—the average man—to buy the car in ever increasing quantities. But what did you do? Well, you bought the car in ever increasing quantities, but not in quantities large enough to suit *Road and Track*.

So the time has come (we said) to do an all-out road test on the "Hank J"—a road test the results of which we already knew—but a road test which we feel is needed—to give you the facts and figures you will want to know, about a type of car we feel that Detroit should be building more of.

We contacted the factory (C. J. Leonard), and he asked R. E. Heysell, Pacific Coast manager, to play along. And he did. He gave us the car which had been used on the Grand Canyon Mobilgas Economy Run.

A more thorogoing road test has never been done on a car—if thorogoing means getting out on the road and subjecting the "J" to the worst beating any car could possibly take.

We picked up the car on a Friday afternoon, drove it to the magazine offices, loaded it with equipment and four people and took off for Reno and the Reno Road Races. And when we say "took off"—brother, we took off!

Unfortunately, the car was equipped with both over-drive and an "economy" (4.11:1) rear-axle ratio. It didn't have the "dig" of the conventionally geared Henry J, but it would cruise at an honest 79/80 mph without seeming to fuss any. In fact, we drove the little car all the way to Reno and back to Los Angeles via a most circuitous route—flat out. 1400 miles were collected on the odometer in this floorboarded condition and the car consumed a little less than one quart of oil.

Thru the winding, hilly country the Henry J lived up to all *Road and Track* has claimed for it. It blew off the best Detroit had to offer without half trying. The acceleration figures in the chart, however, reflect the "too-high" gearing.

Engine

Not too much need be written about that which reposes under the hood. The power plant is the Willys six cylinder, 161 cu in. reliable L head with aluminum alloy pistons, carrying 2 scraper and two oil rings. Worthy of note is the short (3½") stroke, which promises high cruising speeds with little wear.

Quite a bit of interest has built up around the Henry J chassis and engine as a potential sports car. Builders of their own rigs will discover that about three-quarters of the engine is forward of the front wheel line. While this doesn't prevent the Henry J from far out-handling any American car, it is almost certain to prove a disadvantage to those who strip the car for competition. Information about moving the engine to a more judicious position (for sports car racing) will appear in detail in forthcoming issues.

The compression ratio of 7.0 to 1 requires premium gas. None of the "regular" will burn without the unpleasant ping of detonation.

Chassis and Suspension

The frame is rather sturdy box section, much lighter than most of the Detroit iron. This should stand the potential enthusiast in good stead when he contemplates building his own sports car. As for the average motorist: he may expect as much rigidity out of the frame as any current American car and more than many.

The suspension: independent coil-spring front and leaf rear, with Monroe shock absorbers all the way around. It is undoubtedly the contention of the sales department at Willow Run that the car will have more appeal with its soft ride—but that's a pity. The Henry J does ride softly at all times but there is a little "float" at speed on the highway. Owners interested in cross-country or road travel will undoubtedly replace the existing shock absorbers with a "fifty-fifty" type—for a firmer low speed ride but greater security in the open.

Handling Qualities

The Henry J, because of its short (100 inch) wheelbase, small turning circle and actual finger-tip steering is a dream in traffic. Those who want to stay out ahead of traffic from stop signals will want the conventional 4.55:1 rear axle ratio. In that form the car can out-dig nine out of ten cars from a standing start, and it is not until the bigger-engined Cads, Chryslers, etc., have got their speed up that they can "take" the Henry J.

In spite of the soft ride, the Henry J corners well. There is some roll, but this doesn't seem to affect its cornering ability. The Henry J seems to "dig in" just enough on corners to stick like a leech. With the tire pressure up there seems to be no evidence of either under- or over-steer.

On corners the "J" might be out-run by a few of the more expensive European imports, but on the American market, it is in a class by itself.

Bodywork and Interior

The Henry J makes no claim to be a luxury car. Considering that modesty, it carries an exceptionally well-fitted body and good paint of a wide selection of tones. In styling, the designers have obviously tended toward the jaunty in their concepts. The duck tail fenders give a pert look to the little car.

Six passengers may be carried if necessary but four may ride on long trips with plenty of room to sprawl and relax. Driving position was good, as was visibility. Rear seat is very short on leg room.

Notes and Comments

It's time people found out about this car and what it'll do. Very few owners have registered complaints. The majority rave about the car. We wonder how the new Sears Allstate will will accepted by the public. It is a slightly modified Henry J.

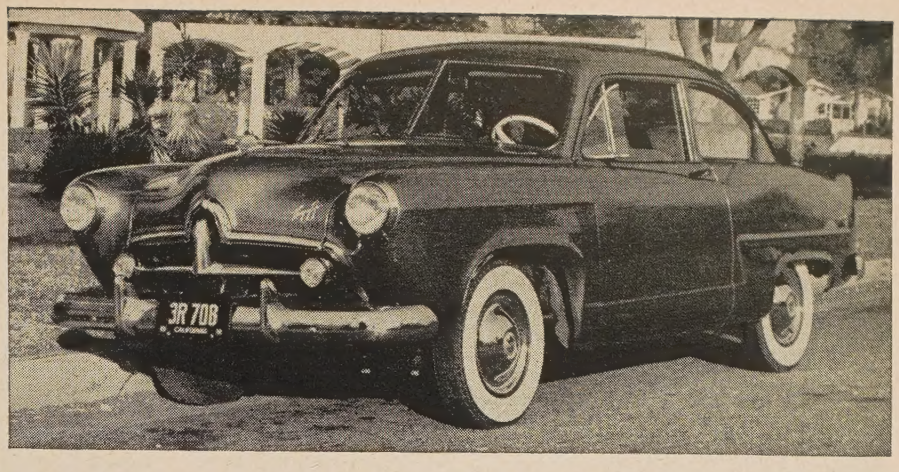
Buyers have reported leaking windshields on their Henry Js . . . the model tested had been used as a demonstrator . . . you know how that can wreck a car . . . yet the engine remained in very good condition.

Best fuel consumption figure was 33 mpg at a steady 30 mph in overdrive. One of the *Road and Track* staff reports that his standard transmission model (4.55:1 rear axle ratio)"J" gave him 21.9 mpg economy over the first 2000 miles—mostly short runs in traffic—no trips over 100 miles. He is also sold on the handling qualities but would like a longer pitman arm.

The early Henry Js came with no trunk compartment, fixed wind-wings, folding rear seat, and "seat cover" upholstery. Now available, at about $100 extra cost, are the "trimmings" left off the early models. Most people feel the improvements are worth the cost.

We have heard various reactions to the Henry J price structure, mostly from people who feel it is too high. Actually, the dealers (at least in California) are operating on a "padded" price basis, which scares off many customers before they ever get into the showrooms. The way this system operates, the higher price is offset by a correspondingly higher trade-in on your old car. Thus, the actual cash difference is just as low as it would be if the list price were set at some more reasonable figure. For instance, one might be allowed $200 to $300 more for a trade-in car than it normally is worth. All of this juggling helps the customer who is short on the down payment, but we wonder how many cash buyers are scared away before they find out the *list* price is not the *cash* price.

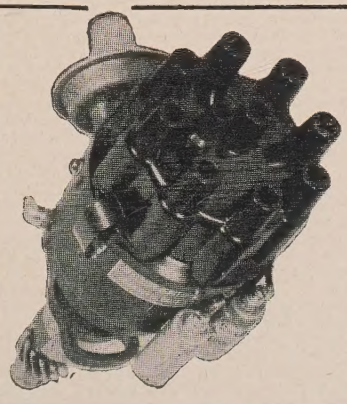
All in all, the Henry J, along with the Nash Rambler and Willys Aero, has made some real advancements in the low priced field. The "big three" had better not become too complacent, else they might find the "independents" slicing off a large chunk of their business.



Try Your Hand At The

HOP UP QUIZ

On The Inside Rear Cover



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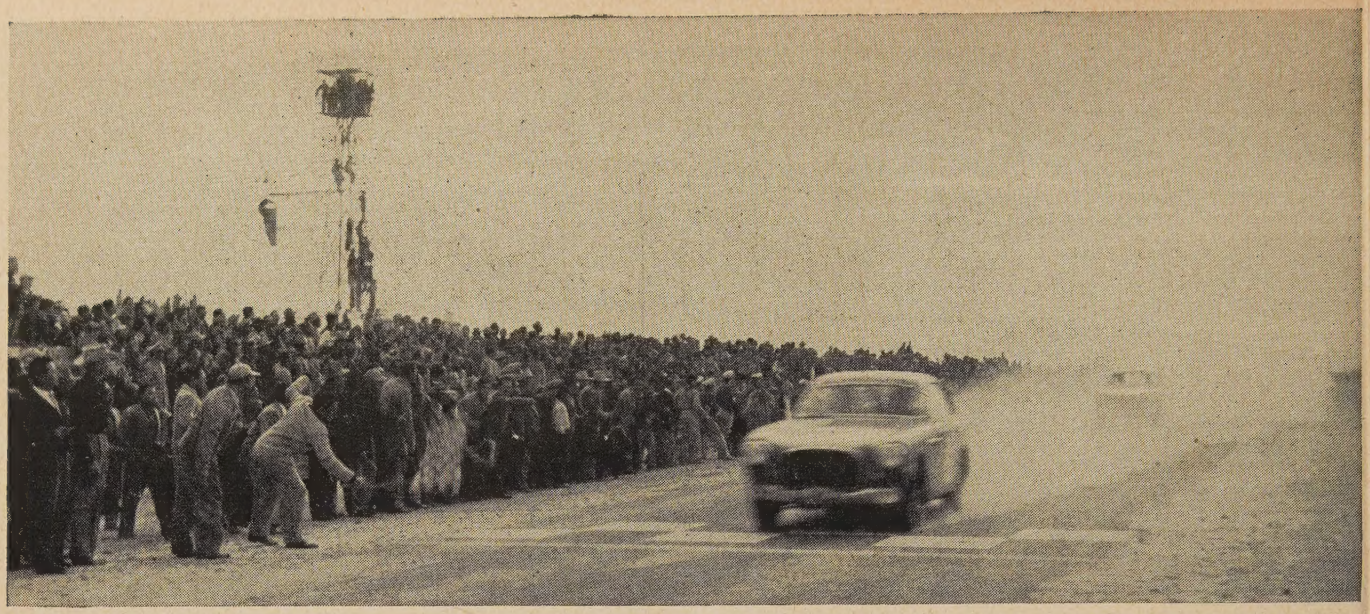


Taruffi, Chinetti, over-all winners, flash across finish at Juarez, followed by Ascari and Villoresi.

Bonetto and Volpini, in the Road and Track Turismo-bodied Lancia Aurelia, start at Tuxtla.

Mexican Road Race

The Event—
II Carrera Panamericana Mexico
(Second Mexican Pan-American Race)
Sponsor—
Associacion Nacional Automovilistica
Route—
Tuxtla Gutierrez (near Guatemalian border) to Ciudad Juarez (opposite El Paso, Texas) 1,933 miles.
Date—
20 Nov. thru 25 Nov. (8 legs, 4 race days, one rest)
Type Cars—
Modified (except camshaft) 4-passenger stock sedans.

Sometimes around the offices of Road and Track *the personnel kicks up its heels and does exactly what it wants to do. This was one of those times. In mid-November everybody took off for what may eventually turn out to be the world's biggest annual automotive event. So much happened that amounted to near chaos on this trip that the editorial staff decided that each member of this crazy jaunt should tell his own story in his own way . . .*

BILL BREHAUT'S STORY

It all started about November 8th . . . when we received a cable from Italy telling us that Felice Bonetto and Gian Volpini wanted help in getting their Lancia from New York to Mexico City . . . in time for the Italians to get down to the starting line by November 18. We knew from the first we would do everything possible to get the Lancia to Mexico in time. But it seemed best to hold a conference.

Finally, after we had made our decision, had sent two cables back to Italy for details, and had gotten two answers, Bill Quinn and I started for Texas in his '51 Ford.

We checked with KLM (Royal Dutch Airlines) and the car was to be flown into New York from Amsterdam via their C-54 cargo flight November 12. If it left New York almost immediately and were flown to Dallas, we could leave here on the 14th at the latest and drive the Lancia into Mexico City in time for the start.

So Bill and I drove straight thru to Dallas—stopping only for gasoline. As soon as we pulled into town, we headed for the airport and the flight office. Good news? Neither American Airlines nor Slick Airways had ever heard of the Lancia . . . much less arrival time.

Meanwhile, American Airlines' New York representative phoned **Road and Track** in Glendale. Their plane couldn't stop in Dallas . . . the car would now be sent to San Antonio on Slick Airways . . . a situation which should have been a warning of worse foul-ups to come.

Our home office phoned us this change of plans and we took off again for San Antonio (where we learned that you **never** say "San Antone"—the people just don't like it).

Tired and dirty, in San Antonio we were told how the Lancia just missed, by a few minutes, getting on the plane in New York. So we stood by the teletype the rest of Tuesday and all day Wednesday . . . waiting for further news.

Billingsley (holding down the fort in Glendale) phoned his play-by-play description of a further confusion in New York . . . and this was our first real blow: New York reported late Wednesday afternoon that they didn't think the little Italian car would go thru the door of a C-46, and they were trying to fit the Lancia in one of their idle planes. Finally this word came in on the teletype of Slick's San Antonio office: "Car will not fit on C-46 airplane. Tried everything." Billingsley declared that **nothing** was impossible. Meanwhile, he was contacting the Mexican Air Force and finally came up with a flight via Miami and Cuba to San Salvador . . . but all for naught as no road from there to the start line existed.

In the face of this set-back, there was one thing to do: break the bad news to Bonetto. So Bill left me to sweat it out while he drove into Mexico to pacify the frantic Italians.

I kept the wires humming. New York . . . Mexico City . . . Glendale . . . You can imagine my state of mind. There it was, the 15th! The car was due in Tuxtla Guiterrez **not later** than the 18th . . . about 1600 miles from where I was . . . deep in the heart of Texas.

Finally some **good** news came thru. Slick Airlines had got ten husky men and had lifted the Lancia into the plane. I think they got worried when Billingsley insisted they cut the plane in half if necessary. The car should arrive the next morning, and I got my first good night's sleep in days. The next morning (Friday, November 16) I called the airport to see if the plane would be on time.

I thought everything had happened that could hold me up, but this was the last straw. One of the plane's engines had caught fire and forced the plane down in Detroit . . . engine change would take at least twenty-four hours!

I was already prepared for a hard drive to Mexico, but this latest development made an already improbable situation completely unthinkable. Billingsley cabled the race headquarters in Mexico about the fire and they readily extended the deadline 24 hours—to the 19th—which put us back in the ring again.

So Saturday morning (plane due at 2:00 p.m.) I went to the airport to wait. I was holding my breath and praying everything would work out all right when I got to thinking . . . if it took all that time and trouble getting the Lancia in the plane in New York, what would happen at this end? How would they get the car **out** of the plane? It was Saturday and only a skeleton crew was on hand at the field. The only equipment I could see was **one** fork lift.

Once my worry machine revved up, it wouldn't quit. I wonder if the key is in the car? What if it won't start . . . and so on and so on. Oh well, at least the car is on its way . . . that's something.

With a sigh of relief I saw the plane taxi down the landing strip and pull up in front of me. The door opened and the crew moved a few parcels out of the way . . . and there was the Lancia. A perfect lady she was too . . . one of the prettiest cars you ever saw . . .

all shiny and compact looking. We surveyed the inside of the plane and decided I would get behind the wheel, start the engine and back to the edge of the doorway—for easy removal.

I got in the car . . . the key was in the lock. That was one worry out of the way, so I pressed the starter button . . . nothing. I remembered the gas tank. Surely it would be empty. They would have drained it prior to take off in New York. Well, it took us an hour to figure out how to open the trunk compartment—so we could get at the filler cap.

Back into the car again . . . push the starter . . . still nothing. As an added precaution against something or other, the battery cables had been disconnected. We had better draw a dark curtain over the state of my mind and nerves at this point. Besides, I've got the rest of the trip to tell you about. However, I'd better mention the turning radius of the Lancia . . . and the ease of handling. It really showed up inside the plane where I maneuvered it. The car turned so short that you could almost make a right angle turn with it. It was unbelievable! My heart was in my mouth during the lowering of the car to the ground with the fork lift.

Thanks to the good work of the two hoist men the car was on the ground, safe-and-sound, ten seconds later. And thirty seconds later I was on my way to Mexico . . . 4:30 p.m. Saturday.

After a few hours on the road I felt completely at home in the Lancia and I was accustomed to the right-hand drive. That part of the trip was one long stretch of straight road. I cruised at 110 kph (68 mph).

At Laredo (the border) I filled up with gas . . . five gallons which figures to 25.2 mpg from Natalia, Texas (where I had filled the tank). I whizzed thru the American Customs with no strain, but on the Mexican side, I got a taste of things to come. You'd think the Customs people would speak good English, but actually few of them could speak it at all. However, they seemed to catch the point about the Lancia being late for the race and they made a philosophical sort of effort—and I got thru in a half an hour.

From there on all I had to do was follow Route 1 all the way to Mexico City . . . should be a cinch. So I got a move on. There was still 760 miles to go.

It was easy to maintain my cruising speed as far as Monterrey—very good roads. But in Monterrey I got lost . . . no road signs. Finally a car let me follow them out to the main road and I had little trouble from then on.

The roads were fine for another couple hundred miles. The roads—that is—but there seemed a superabundance of cows, horses, pigs and farmers (I guess they were farmers) lying in the road. That's where the high-power lights came in handy. As midnight approached, I noticed more and more campfires along the road . . . with these same farmers standing around . . . why I'll never be able to figure out. And fires kept sliding by me as late as 2:00 a.m. Very few towns along the way . . . not too sleepy yet . . . excitement of driving the fabulous Lancia kept me awake.

Now the hilly country started coming up . . . and here's where I got a chance to really appreciate the Lancia. It was sensational on corners.

I had heard about the mountain roads this side of Mexico City, but I didn't expect anything as bad as I found. I passed the remains of three trailer-trucks which had rolled over and at least a half dozen which had broken down. As the altitude increased, the Lancia had less pep, but in third gear, up and down the precipitous road, I had no trouble outdistancing other traffic . . . and that was while babying the car in order to save it for the race.

By now I started getting drowsy. The spare tires were hard against the seat which was pushed forward, so I had to get out several times and stretch my 6 feet, 2 inches, to avoid cramps. Twice I stopped to catch fifteen minutes of "shut-eye." The Lancia is only 50 inches high so head room is not exactly spacious. I found I could barely walk after 18 hours in the car.

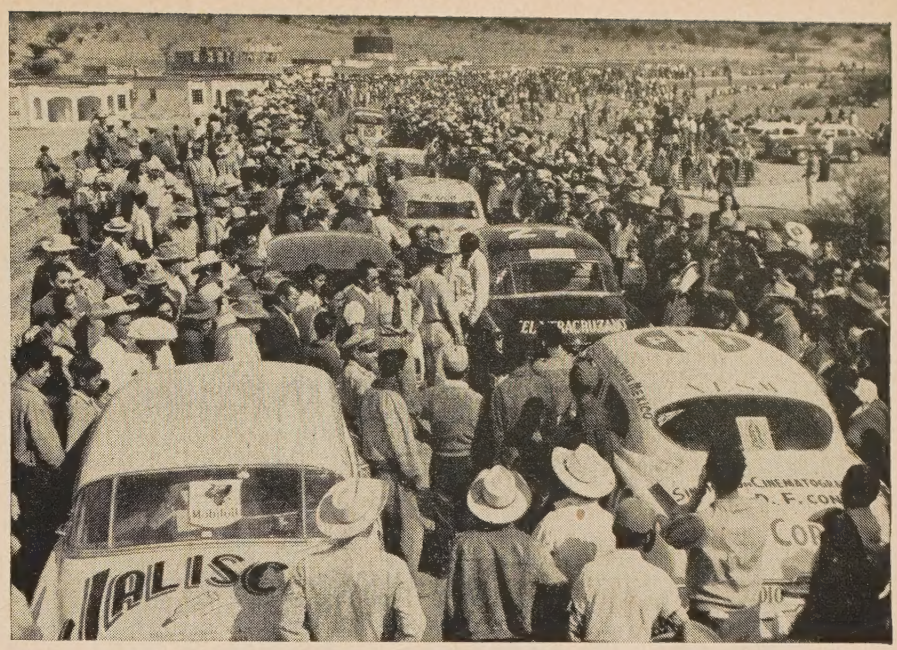
It was laborious now, holding the car down to 50/60 mph with Mexico City so close—250 miles. It was daylight and the road continued winding and mountainous . . . as high as 10,000 feet.

Finally I started **down-hill** and began hitting an occasional 120 kph (75 mph). The temptation was great to really open it up, but I couldn't see ruining the engine after all the work we had gone to. I had not taken on gasoline since crossing the border, tho I had used the extra five gallons I had been carrying. It looked like I could get all the way into Mexico City, but to be on the safe side I stopped and filled up with "Super Mexolina." 760 miles on 33 gallons—an average of 23 mpg!

The rest of the trip was uneventful—except for getting lost in Mexico City—and if you've ever been there you know that's easy to do.

It's hard to describe my feelings about the Lancia—except to say that I think it is the best car in the world, Rolls Royce notwithstanding. The finish is not exciting, being comparable to the average European family type car, but that suspension and resulting road-holding is just fantastic! By word of mouth you have probably heard of the way it sticks to the road, but you must drive the car in order to be able to understand what it is like. On downhill turns, I took corners faster than I could have with any other car I've driven, and never did it "break loose" nor produce tire squeal. I could feel the four-wheel independent suspension "working" up and down on the rough roads but the car never seemed to roll at all.

Bonetto says this Lancia (9:1 compression ratio, specially tuned thruout) will clock 115 mph and I believe him. The 2 litre V-6 engine has pushrod-operated, inclined overhead valves. Body is by Pinin Farina but does not carry his name plate, as it is not custom built but is a production line model. The V-6 is smooth—as smooth as any six I have ever driven.



Above, Parral. ". . . seemed to have little regard for their lives." Crowd somehow made way for speeding cars, then swarmed over road again. Mexican enthusiasm for racing is high.

BILL QUINN'S STORY

Leaving Bill Brehaut in San Antonio with his multiple worries re the ultimate disposition of the Lancia, I took off for Mexico City at 9:00 pm. Cruising over the excellent highways of South Texas, I soon reached the border town of Laredo. After the usual formalities were disposed of, I had to wade thru a herd of salesmen selling everything from small dogs to car insurance.

Without a doubt, the road from Laredo to Monterrey contains fewer corners than most, and smart time can be made over this stretch of Mexico. Pulling into a gas station in Monterrey, I was quite alarmed at the way the meter on the pump spun, totaling up the pesos. However, a little mental arithmetic reassured me (one peso is equivalent to 11 cents). I asked the attendant to clean the windshield and he promptly climbed upon the hood with his big, flat, bare feet, and spent at least five minutes industriously putting a sparkle on the previously bug-spotted glass. As I left, I detected a startled look in his eyes and down the road it suddenly dawned upon me (greengo! peeg!) that in Mexico windshield cleaning is an extra and tipping was expected.

If anyone wonders what became of the Model "A" Ford . . . the answer can be found in Monterrey. Coveys of them, mostly touring cars of '29/'31 vintage serve as taxicabs and—ready to fall apart—they charged haphazardly thru the night on the rough, dimly-lit side streets.

Finally, after much delay and pleasant confusion, I found my way out of Monterrey and pressed on . . . regardless.

Now the highway was becoming congested with large trucks and trailers. A new technique was discovered and employed in overtaking these vehicles, to wit: furious blinking of headlights and loud blasts of the horn—starting approximately 200 yards back. Sometimes this would win you the necessary space to squeeze by. Without these fireworks you find yourself in the ditch. The average Mexican is unaccustomed to long hours at the wheel without benefit of siestas. He weaves and wanders drowsily over the highway. Of course, as soon as you have passed, up go his high-beam lights and driving for the next few hundred yards becomes a matter of dazzling guess-work. Later, when Chesebrough joined me in Mexico City, he discovered that our portable spotlight could be focused thru our rear window. From then on, he played contentedly.

Dense fog finally restricted my speed, but with the dawn, it gradually lifted, revealing towering mountains (thru which the excellent highway lifts to some 10,000 feet). On and on at a steady 80 I drove. It was now dense tropical country and the screech of wild birds reminded me of travelog films.

Hour after hour the Ford twisted and turned on the 134-mile mountainous dash into Mexico City. Trying to make time thru the mountains is hard work and the 3000 odd curves added up to quite a few blisteres on my hands. Many times I topped what I would think was the final grade only to be confronted with seemingly endless mountain ranges ahead. Dusk was approaching as I happily left behind the last of the really rugged section.

If anything worse than Mexico City during rush hour can be encountered, I want no part of it! It took a good 2 hours to find the hotel and check in. A good night's sleep was welcome after my 20-hour stretch at the wheel.

The next day Bonetto and Volpini flew in from Italy and got in a fine state when I told them of the Lancia's plight.

The next 2 days brought many harassed long-distance calls to Laredo and Los Angeles to expedite Bill Brehaut's passage across the border. Finally on the last day, Bonetto and Volpini were pacing the sidewalk in front of the Comee Hotel. Suddenly the trim Lancia was seen in the distance and the Italians went wild. They fell all over the car and Bill, practicaly lifting him to their shoulders. Now the pre-race work and tuning began on the Lancia. Bill and I caught up on our sleep.

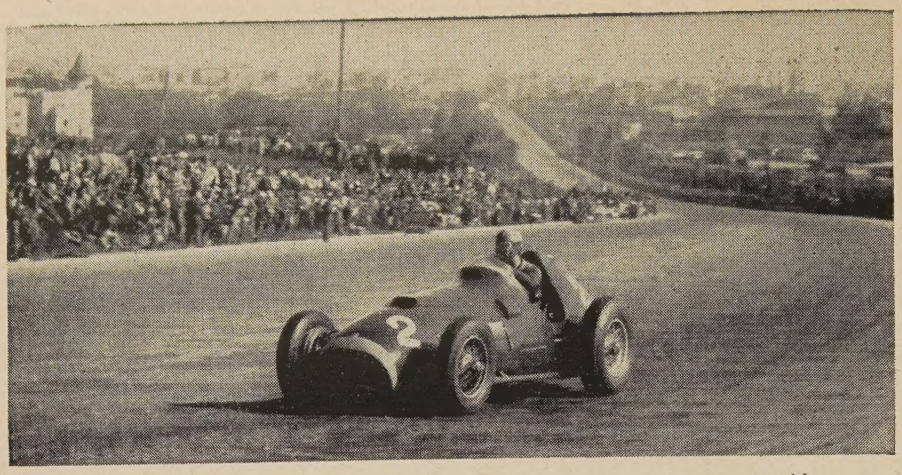
Chesebrough flew into Mexico City late at night. I stuck him behind the wheel of the Ford and pointed my finger toward Tuxtla some 600 miles South. That's all you need to do with Chesebrough. If he was a bird dog and I owned him, I wouldn't take 19 million dollars for him.

To make time on these mountains required fast cornering. And you should have heard the tires. They squealed like a bunch of pigs. Chesebrough and I agreed that the Ford's rubber would show considerable wear by the time we reached Oaxaca. With a remark to this effect, my photographer companion yawned lustily and slipped serenely into the arms of Morpheus . . . just like that.

To get back to the tire wear . . . suddenly, while charging around a severe left-hand bend, the right front tire let go with a loud bang. For once, Chesebrough popped awake—just as we slid toward the edge of a sheer cliff—all four wheels locked tight. It was nip-and-tuck for a moment, but we finally got the Ford stopped in time and crawled shakily out onto the road. As we stood there, contemplating the yawning chasm before our eyes, Chesebrough made the prize understatement of the year: "This could have turned out a lot worse."

As we changed the tire, we examined the blown casing . . . worn thru to the tube. You can believe we drove quite a bit slower from then on. We arrived in Tuxtla tired and weary—both of us swearing that if we got home safe and sound we would never drive any further than the corner drug store. But ten minutes later I was dashing back up the road with Bud Sennett as he made a test run. You don't have

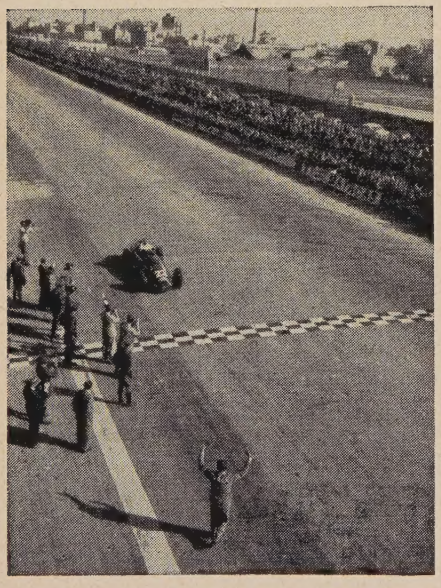
(Continued on page 42)



Ascari lost all hope of victory in the early laps . . . tire and engine trouble.

BARCELONA GRAND PRIX

Article and Photos by Corrado Millanta



Above, Fangio, World Champion, sure, calm.

Below, Ferrari tire threw portions of tread.

This marks the end of the hardest fought and technically most interesting Grand Prix season in twelve years. In fact, two teams (Alfa Romeo and Ferrari) were equal in their chances when they came to the Barcelona starting line. And two drivers were nearly equal—the winner at Barcelona would be Champion of the World . . . either Ascari (Ferrari) or Fangio (Alfa Romeo) (see salon section).

Alfa Romeo, winning beautifully this last race of the season, answered excellently the prophecies of this and other writers; particularly when she entered and finished strongly four cars.

Incontestably, Ferrari (starting his unblown car from zero a little over a year ago) is in the ascendant phase—while Alfa Romeo is (with the 14-year old blown car) on the defensive.

I have written in the past few months that small supercharged engine is to be considered at the end of its career. In the light of what happened at Monza and Barcelona, it is no longer possible to hold this view. It can only be said that some kind of an equilibrium exists. Technically one may still hold to the former beliefs, but after Barcelona races, no one is able, in all fairness, to predict the results of next year's racing.

From one side we have the very classic blown car; the purest exponent of the Italian school; the nervous Alfa Romeo 159. 1500 cc, 8 cylinders in-line, it was born 14 years ago with 180 hp and has risen today to 440 hp. On the other side, the exponent of the contrary tendency: the calm 4500 cc Ferrari V-12 . . . calm appearing, but actually fierce—the Ferrari which so courageously chose the way for the unblown engine . . . so long in disfavor. So these two opposite schools are now on a more or less equal level.

It is interesting to trace the causes which had so much to do with the Barcelona result. Surprisingly enough those causes turn out to be mostly the tires. And to understand we must retrace our steps to the Italy Grand Prix (Monza), when the Ferrari technicians used smaller tires against the advice of the Pirelli Company. And the Ferrari people did so principally so as not to put too much strain on the transmission.

Using these smaller tire sizes, they got the advantage of quicker acceleration, and in the meantime trying to rise to the maximum efficiency in braking. Ferrari hoped to arrive at both superior acceleration and braking, but this greater efficiency was gained at a great cost of tires.

The situation today of maximum weight to horsepower ratios (about 4.4 lbs per hp), makes the problem of tire sizes of chief importance. The use of smaller sizes can improve the acceleration because they sensibly help the transmission, but, as we have seen, they destroy the tread of the tire itself. Back in 1939 these powers of acceleration were drained away by the use of 19-inch tires. Now it is possible to use 17-inch tires—showing the tremendous progress made by the tire companies. Pirelli Tire Company advised Ferrari against the use of the 16-inch, but Ferrari used them anyway at Monza—and the tires resisted that race very well. Taking Ascari's case: he made 124 miles before his first tire change.

It is better to remember that the Monza race was not disputed at full speed—Alfa Romeo being unable to fight as she would have liked. In fact, Ferrari was able to slow down to lapping in two minutes average. So we couldn't tell at that point what would happen to the tires in a faster race. After the good result of Monza, Ferrari chose to use the same tire size at Barcelona (7.05 x 16 rear, 5.50 x 16 front) . . . and the surface at the Spanish course is not the same as at Monza. Unlike the Italian circuit's asphalt surface, Barcelona is a common road course. Even tho it is in good condition, we found that some spots which needed braking and acceleration were covered by sand. And these spots of slowing down and speeding up were far more numerous on the Spanish course. At Monza the drivers only used 3rd gear twice each lap, while at Barcelona, they had to even use second gear.

Besides having an irregular surface, the Barcelona straight is 2/3 mile longer—this difference keeping the tires that much longer under strain. So if we consider the race cars speeding on that spot at 186 mph, we find they are already (at 4.4 lbs per hp) at their limit of performance.

We have seen that the chief cause of Ferrari's bad result at Barcelona was in the tires and we do not know what would have happened had the Monza race been faster. Now we will examine what was Alfa's situation in the same Piña Rhin race.

After Italy Grand Prix (Monza) the bad result Alfa Romeo suffered came from imperfect engine performance and the loss of a very good driver (Canesi) who burned himself during practice.

Monza Grand Prix brought Ascari (Ferrari) up in point standings—putting him level with Fangio in the battle for World Championship. And in the interval between Italy's (Monza) Grand Prix and Barcelona, Alfa Romeo's team under Ing. Colombo lost not a single moment working on their old engine—the chief improvements Colombo adopted on the 159 type Alfa were: a more powerful supercharger, a camshaft with less over-lap, and a dynamically efficient air-scoop (which helped—in tests—the top gear speed). In any case, the Alfa Romeos which disputed at Barcelona developed 440 hp and the lap time of Farina, Fangio and Bonetto, while practicing at Monza (in preparation for the Spanish race) were very satisfying: two second better than at the Italy Grand Prix.

Ing. Colombo, being a good connoisseur of Barcelona ground, went the opposite way from Ferrari's technicians—he used larger tires swelled to the highest pressure possible and for the race a very sensible suspension,

(Continued on page 41)

TECHNICAL CORRESPONDENCE

BUILDING HIS OWN

I want to build a sports car from the ground up! I think I can handle the project thoroly with the right kind of information. As far as experience goes: I am considered an A-1 autobody man; I have studied college physics and mechanics and have enough artistic talent to appreciate a good clean line. Please introduce me to some literature that covers such topics as the design and building of sports cars and whether plans of successful sport cars built in the past are available today.

E. Paterson, N. J. Leonard A. Geentiens

You have all the qualifications required to do a good job of building a sports car. Unfortunately, there are no books available. Charles Manning (7917 Vicksburg Avenue, Los Angeles 45, Calif.) sells plans for his car (Sept. '51 Road and Track) for $2.00. The March 1950 issue of Road and Track has plans for a special, using Ford parts.

We plan to run a series of articles on building your own sports car, and these should give you plenty of ideas. I also think you should contact local members of the SCCA for rules, regulations and classes.

"Lincoln gears" refer to transmission gears and the 1940-41 models are the only ones available. We covered this subject thoroly in Road and Track for January 1950.—Tech. Ed.

ANTI-FREEZE PROBLEM

I have a problem concerning anti-freeze—to be used with aluminum heads. I have a 1950 Ford with Edelbrock Heads (8.5-1) and dual manifold. Which of the various anti-freezes are the safest when aluminum and iron are close together? What temperature-level themostats would you advise for climates of -10° to +30°? What type of gasket would you use with anti-freeze in the engine?

Angola, Indiana Henry T. Chickering, Jr.

Nearly all the nationally advertised brands of anti-freeze include an inhibitor, primarily to prevent rust, of course. I suggest Prestone as one of the best. Have the head bolts re-torqued (engine cold) before using it. Aluminum heads seldom give trouble with an anti-freeze, in fact, engines like Rolls-Royce and Allison with all aluminum construction run with Prestone as the ony coolant.

Copper-asbestos gaskets are considered the best, but regular Ford parts are good. The biggest headache from aluminum heads comes from neglect and failure to use anti-rust compound in the summer.

I suggest 160° thermostats. I tried 180° in my milled head '49 Ford and it seemed to knock a little more.—Tech. Ed.

MORE "PLYMOUTH GO"

My car is a stock '49 Plymouth. I am not dissatisfied with it but would like a little more "go." Friends have suggested different gear ratios. What about a milled head, cam, dual intake manifolds, split manifold, etc., at not too much cost? Will it stand any higher compression without hurting the engine?

Des Moines, Iowa E. L. Albaugh

You can certainly make your Plymouth go equal to a stock Olds 88 without too much cost.

Most Plymouths have 4.1 axle ratio, but they also use, or have used, 3.73, 3.9 and 4.3. The 3.9 is a good all-around compromise with a hopped up motor, but 3.73 is best for speed, both in the gears and in high. However, for pickup, the 4.10 is hard to beat. If you want more speed in 2nd gear, use the 1940 transmission parts which provide a 1.55 second speed ratio instead of the 1.83 ratio used since 1941. Low gear ratio has not been changed since 1932.

Bell Auto Parts (see ad) have a special list of Plymouth equipment available which answers your questions on the engine. Higher compression, reground camshaft, and dual carburetors are about the extent of engine modifications, and of these the cam makes the biggest change. The Plymouth isn't the sturdiest engine built, but these moderate changes should have no noticeable effect on durability.—Tech. Ed.

BUICK ROADMASTER

I am a very ardent sports car fan and would like some information on the performance of the Buick Roadmaster (up to 1949 with synchromesh gearbox). My brother owns one of these monsters and claims he can beat an Olds 88 from 0 to 60 mph. I am doubtful of this, but have personally seen him take one from 65 mph in 3rd gear.

Could you tell me the clocked speed of this car and time from 0 to 60? How about the top speed of a Studebaker Commander Six?

Dallas, Texas Earl Roberts

We've never tested the Buick Roadmaster and neither has any of the British magazines. However, the "Autocar" for Sept. 14, 1951, had a test on the '51 Special that was very interesting, especially the speedometer error. Its top speed was 83 mph, with the speedometer reading 100! Zero to 60 mph (conventional trans.) took 22.7 seconds, and note that to reach an actual 60 mph the speedometer had to go to 73 mph.....

I would say that a '49 Roadmaster is capable of 92 to 94 mph clocked and should do zero to 60 in 15 or 16 seconds with that excellent 3-speed transmission.

The post-war Commander six ought to do between 85 and 90 mph, dependent on conditions, gear ratio, and body style.—Tech. Ed.

WEIGHT DISTRIBUTION

I would like a little information. I am neither an engineer nor a mechanic, but I do love automobiles. (1) Just how far back in the frame should a sports car powerhouse be located to give proper balance? (2) How do these foreign sports cars compare to 'Detroit Iron' for reliability and trouble-free operation?

Hopkinsville, Kentucky Charles D. Shanklin, Jr.

The question of comparing SPORTS CARS to Detroit iron for reliability is not difficult. The Detroit product is certainly better, tho a lot depends on how you take care of the car. I would say an XK-120 driven and maintained properly would certainly do better than a Ford or Chevrolet treated like far too many people do. Or, consider an Allard with an American engine and you have "everything"—sports car performance, American car reliability, ease of servicing, and parts availability.

The Cad-Allard J-2 engine is located so that the fan lines up with the rear edge of the front tires—i.e., the leading edge of the fan is about 14" aft of the front wheel center line. Just for a rough rule, the fan should never be ahead of the front wheel center line on an average size sports car.—Tech. Ed.

'39 PLYMOUTH HOP UP

How can I hop up a '39 Plymouth? It is a 4-door sedan in top condition. It has 42,000 miles on it and has never been over 60 mph (even tho it will make much more).

Water Valley, Miss. Don Lancaster

I suggest you write directly to Engle Machine Shop, 808 14th St., Santa Monica, Calif., who did a very good job on a Plymouth at reasonable cost. Ask them for full details on what they did to this car (a '49, not much different from a '39)—what its performance was, and price of their reground camshaft.—Tech. Ed.

'51 PONTIAC HOP UP

1. Could you tell me how my 1951 Pontiac could be hopped up a little? Would a supercharger help?

2. Could a Borg-Warner overdrive be installed in this car?

3. Which 1952 car is the "hottest"—Olds 88 or Chrysler? Will a supercharger fit either?

Pearl City, Illinois Darrell W. Sheffey

To answer your questions in order:

1. There is no supercharger avaiable for your Pontiac 8. All you can do is to install the optional 7.5 to 1 head, have the cam reground, and possibly try a dual carburetor manifold. (Bell Auto Parts, 3633 E. Gage Ave., Bell, Calif.)

2. A Borg-Warner overdrive cannot be fitted to any General Motor car. Pontiac has various optional axle ratios used with Hydramatic installations. About 3.64 would be about the "fastest" you can go, and still not be too dead on pick-up.

3. The December 1951 issue of Road and Track has a road test on the Chrysler Saratoga, and it is the hottest American car built today. No superchargers are yet available for either the Chrysler or Olds V-8.—Tech. Ed.

V-8 vs GRAHAM

I am considering the purchase of a 1939 Graham. Is it practical to install a '40 Ford engine in it? If not, how could I get more power from the Graham engine (supercharged)? I'm afraid changing the cam or raising the compression ratio would make the blower less effective.

Eugene, Oregon Melvin Bishop

I am inclined to agree with your thoughts on V-8 vs Graham. You can do so much more with the Ford, and all sorts of equipment and parts are available.

I understand the Ford will go into the space available, but you have to use the Ford transmission equipped with the 1942 Commercial model rear bearing retainer (for open drive shaft).—Tech. Ed.

FAN CUT-OUT

Would appreciate information on automatic fan cut-outs. Why are they not used in automobiles today?

Banning, California J. W. Hillesheim

The very early Cadillac V-8 and the Wills St. Claire V-8 had fans which automatically cut out at about 40 mph. These devices were very troublesome because when you slowed down, the clutch had to pick up the fan from a standstill, putting quite a strain on the clutch and fan blades.

About 1947 Ford offered an optional "eddy current" driven fan, made by the Eaton Mfg. Company . . . cost about $28 and listed as Ford part No. 59A8654. It fits only 1942 to '48 Ford/Mercury V-8s. A thermostat in the engine cooling system controls the action of the electric "clutch," and the fan only turns when the engine gets to a certain temperature. You may eliminate the thermostat and use a simple manual switch to start and stop the fan. Since there are no friction surfaces, it can stand repeated usage more or less indefinitely.

The cost of such a device makes its adoption as standard equipment absolutely out of the question. Even assuming it costs only $5.00 to manufacture in millions, it would get no consideration because, unfortunately, mechanical features haven't as much sales appeal as foam rubber seats.—Tech. Ed.

'51 MERC HOP

I have a '51 Mercury sedan, standard transmission, Belond exhaust system and 3400 miles on the odometer. The car seems slow and not very good on curves. How much should I mill the heads? Do you suggest any other changes such as lowering blocks, etc? Will life guard tubes have a retarding effect on your top speed? Are there any moderately priced superchargers on the market?

Peru, Illinois C M. Keutzer

The best way to hop up your Mercury is to install special aluminum heads and a ¾ cam at the same time. These two "cooperate" in that the cam allows a higher compression ratio—and still permits running on pump fuel. A cheaper method is to use stock Ford (8BA) heads on the Mercury, but the specials are better in every way.

Lowering blocks(say 1½") will make some improvement in handling on curves and life guard tubes will not affect top speed.

The only supercharger for the Mercury is the S.CO.T. which is priced at $467.50 plus installation.—Tech. Ed.

'51 MERCURY

I have a 1951 Mercury Sedan with overdrive. It has fine acceleration up to 55-65 mph, then it needs more power for fast passing and high speed performance. How can I gain this without too much changing or high cost? I don't drive a car more than a year so I wouldn't want to change it drastically. Would you recommend, cylinder heads or cams? or what else?

Iowa City, Iowa Walter Schultz

In answer to your question on the '51 Mercury, are you sure you aren't in overdrive at 55 to 65 mph? Maybe you'd like one of these new overdrive switches? They are OK. I say that the camshaft is the "heart" of an engine, and you can do more there than anywhere else. But if you put in a cam, you can then stand more compression (on the same fuel) so just as a suggestion why not put on a set of '49-51 Ford heads. This will give about 8 to 1 which is plenty high unless you "relieve" the block, etc., which is a lot of work.

First, try the Ford heads and dual exhausts, which is less work than switching cams. Then if you still aren't satisfied, get a ¾ cam regrind.—Tech. Ed.

V-8 60 POWDER

Can you give me any information about hopping up my '37 Ford 60 hp coupe It is completely stock. How do I get oil pressure? It is also hard to start after it has sat about 24 hours. Some of my friends tell me it isn't worth the powder to blow it up.

Woburn, Mass. Robert McKinley

The Ford 60 was a very well-built little engine, designed to give performance and economy suitable for a Scottish old maid.

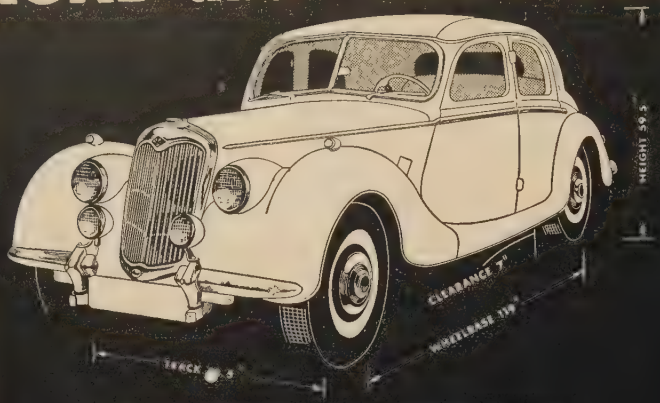
If your engine lacks oil pressure and starts hard, it probably needs an overhaul job—and by that I don't mean new rings but a rebore, which is the only right way to rebuild an engine.

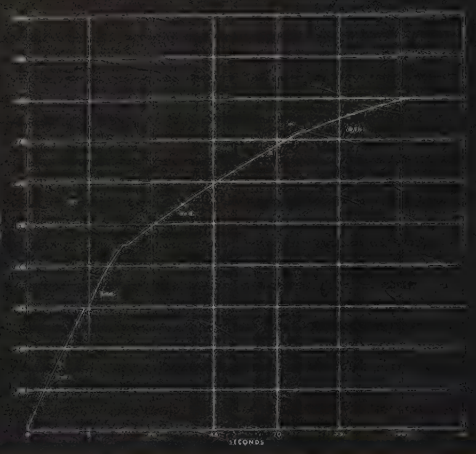
However, if you want more performance, I suggest you apply the powder your friends mention, and either put in an 85 engine, transmission, and axle gears or trade it off!—Tech. Ed.

(Continued on page 35)

ROAD and TRACK ROAD TEST No. F-11-51

Riley 2.5 Litre





SPECIFICATIONS

Arrangement and number of cylinders	4 in line
Valve Arrangement	inclined ohv, 2 cams in block
Compression Ratio	6.8:1
Horsepower	100 at 4500 rpm
Bore: 80.5 mm, Stroke: 120 mm, Displacement: 2443 cc	
Transmission: 4 speed, Ratios (15, 8.86, 5.83, 4.11:1)	
Dry Weight	3220 lb.
Overall Length	186 in.
Overall Width	63.5 in.
Number of seats	2 front, 2 rear

PERFORMANCE

Standing ¼ mile	19.6 sec.
Flying ¼ mile:	
Upwind	86.5 mph
Downwind	105.2 mph
Average	94.9 mph

SPEEDOMETER

Actual Speed	Speedometer
39.3	40
57.5	60
77.6	80

Because the Riley is one of the oldest and most respected British cars, and because there is always a note of sincere admiration in the Britisher's voice when he mentions the racing history of Freddy Dixon and the fabulous Riley "Nines" of the late twenties and early thirties, *Road and Track* thought it worth while to persuade Karl Christian of Gough Industries to turn one of the 2½ litre sedans over to the staff for testing.

The Riley is definitely not Everyman's car but falls more into the category of a connoisseur's piece . . . a specialist's conveyance.

Probably few cars in the world today will equal the Riley in fast, long distance transport—particularly those anywhere near the same engine capacity and price. Its 2443 cc engine allows what seems to be effortless cruising at well over an honest 75 mph—and this on a nearly accurate speedometer.

The Engine

Developed by Riley in 1926 (when that family of coachbuilders, chassis designers, and engine creators was totally independent), the four-cylinder power plant remains (with the exception of periodic refinement), much the same: hemispherical cumbustion chambers, twin cams set high in the block, large over-head, inclined valves and large polished ports.

Long stroke engines are out of vogue today. The latest engineering theories advocate short strokes and low piston speeds. Yet the Riley, contrary to what would be expected, has a reputation for a remarkably long life.

Below forty-five mph the car feels heavy and sluggish (a feeling belied by 0-60 clocked times). It is obviously geared and cammed for long fast hauls. Some engine and tappet noise is clearly apparent at low speeds (from the exhaust side); however, as any Riley owner knows, the car begins to come to life when it passes the 55 mph mark . . . it begins to smooth out . . . catch its stride, so to speak. Also known to Riley owners is the slow breaking-in of the Riley. When new, it is tighter and rougher than many. At 5000 miles the car feels "ready to go", while at 10,000 it has begun to loosen up and run properly. From England and Europe, owners' claims of 60/80 thousand miles without overhaul appear to be the rule rather than the exception.

Riley uses a high pressure gear-driven oil pump which pushes the oil (at 50 lbs. pressure) thru a full-flow filter (replaceable-cartridge type) and the capacity is nearly nine quarts of 30 weight oil. This amount of lubricant may seem a headache during the 3000 mile changes recommended by the manufacturer, but it pays off under duress of heat and high speed travel. The large, finned, cast-aluminum sump keeps the oil cool and prevents its breaking down.

Twin carburetion (S.U., type H4) is stock on all Rileys. Economy and ease of starting is maintained by the hot-spot manifold. Most of the water for engine cooling is directed thru the cylinder head and around—where most of the cooling is needed.

The Chassis and Suspension

A glance at the underside of the Riley is reassuring, particularly when the construction is compared to existing American cars. The impression one gets is of sturdiness thru-out. The frame is huge box section with dropped tubular cross members, giving a low center of gravity, and great rigidity.

The rear suspension by half elliptic springs and airplane type shock absorbers gives a firmer than normal ride at low speeds but a delightful freedom from roll on corners.

Front suspension is an engineer's dream—the tubular struts and A frames pleasant to the eye. Torsion bars carry stress from the independent front suspension to the first cross member immediately aft of the engine, where chassis rigidity is high. Thus, calculated steering geometry is maintained to a high degree.

Appealing to the owner/maintainer is the easy method of front wheel alignment and simple torsion bar adjustment. The front wheels run with no toe-in, which lack of angle is easily maintained by loosening, setting and re-tightening the track rods. The torsion bars have a set screw which adjusts the tension, making it quite simple to keep the front end of the car running true.

Coachwork and Styling

Adherents of the modern envelope-body school will feel that the Riley is old fashioned in concept. Connoisseurs will as fervently cling to its (as Nuffields put it) rare combination of classic and modern. The car has "sure-nuff" front fenders (score one for the classic fans) and both of them are visible from the driver's seat (score two). Also visible on each side of the narrow radiator shell is the ground immediately in front of the car, making it simple to avoid chuck holes and bits of flotsam which may turn up on the highway from time to time.

There is a serious blind spot to the rear and to each side, but which may be overcome by the fitting of twin side-view mirrors on the front fenders.

The air stream over the car is smooth because of the flowing lines of the Riley—and living room intensity conversation may be maintained at high speeds without difficulty. The only indication of wind noise is the slight whisper of the outside hinges on the doors . . . hinges which incidentally are equipped with grease nipples—another boon to the owner who likes to fuss with his car.

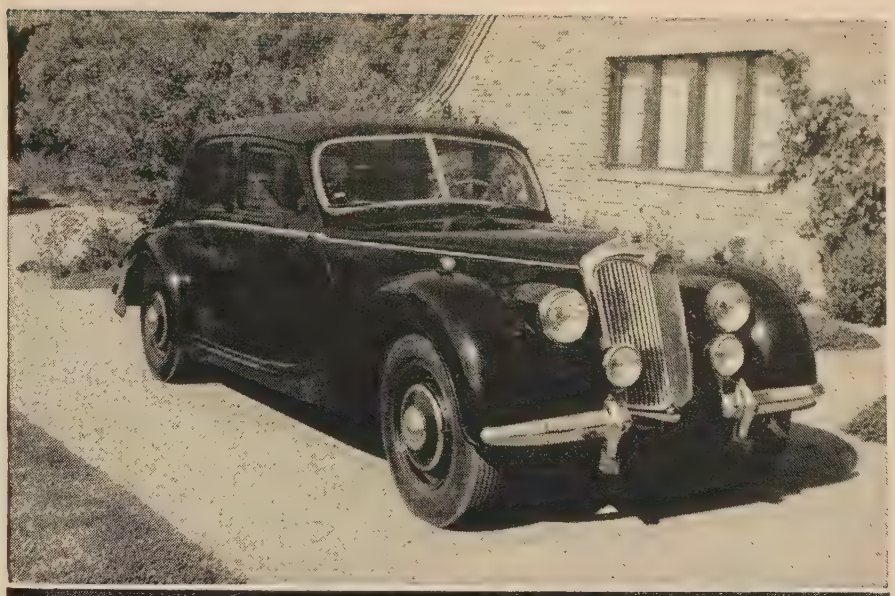
A fair amount of luggage may be carried in the rear compartment and the spare tire has a shelf of its own beneath the rear deck, making it possible to remove this fifth wheel without disturbing the luggage.

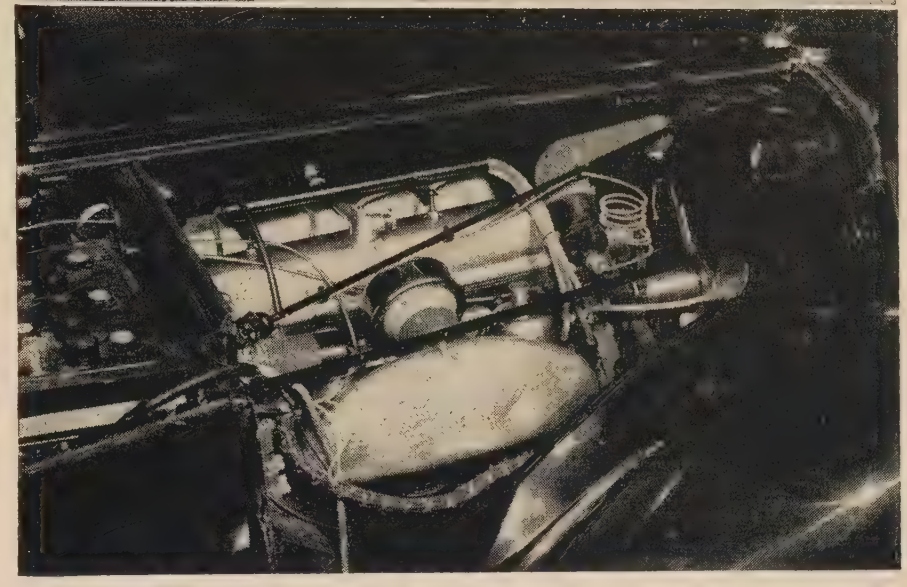
Fine leather and wood combine to make the interior luxurious without being ornate and the seating arrangement is comfortable. Arm rests front and rear are welcome to passenger and driver alike. The instrument panel is simply arranged and easy to read, tho the optional tachometer might be used (by some) more than the large electric clock; and the speedometer should be moved to the position the clock now holds, for easier reading on the left-hand-drive export models. The hand-operated ignition control, mounted on the dash is a helpful addition in to-day's varying octane fuel situation.

One of the best features of the Riley (and we hear this gimmick is regrettably passing from the English automobiling scene) is the ring and pull-cord on the head liner adjacent to the driver's head. A pull on the ring and a semi-transparent blind covers the read window, spelling sure defeat to the high-beam boys who follow you mile after mile all the while refusing to dim their lights.

The steering wheel is adjustable for height and distance from the driver, while the twin bucket front seats have a wide range of positions to suit driver and passenger individually.

Wells in the floor of the rear passenger compartment are a wise thought, giving low seating *and* roominess for the rear passengers' feet.





Steering

And now we come to the big argument about the Riley. An owner's wife expressed enthusiasm for the 2½ litre, eliciting amazement from a local Riley dealer—he had met few women who actually liked the Riley. It is true, the car steers heavily around town, partly because of the low number of turns lock to lock (2⅓) and partly because of the spring loads in the rack and pinion steering.

The former of the two reasons makes for extreme road-worthiness and accuracy at high speeds—even on rough roads, and the latter (spring loading) was done with the Riley designers' eyes wide open.

In keeping with the reputation of long life, Rileys have evolved a steering gear box which needs lubrication only every 30,000 miles. This means a grease packed steering gear box; and when the mornings are cold . . . the grease is thick. Result: heavy steering.

Rack and pinion steering, common to many European and British cars, gives highly accurate steering and delightful feather touch in controlling a car—with two disadvantages: (1) road shock is transferred into the steering wheel, making bumpy roads doubly unpleasant, and (2) a good percentage of the road shock is also transmitted to the rack and pinion unit—causing inordinate wear.

The spring loads in the Riley rack and pinion unit, are meant to counteract these two disadvantages—with heavy steering at low speeds as a result. It is a simple matter to remove the springs if light steering is desired, but the two aforementioned disadvantages reappear.

Handling

The Riley may be driven 85/95 mph over rough, pitted, corduroy roads with very little loss of control. In fact, at one point, over such a road (which slowed American traffic to 50 mph) a *Road and Track* test driver removed his hands from the wheel at nearly 100 mph, whereupon the car "drove itself" straight as a die for a couple of hundred yards.

In corners, the Riley is remarkable. The factory recommends 24 lbs sq in. as tire pressure, which (like practically all factory recommended tire pressures) is too low for anything but straight line travel. 30/32 lbs sq in. were kept in the Riley tires during the tests, making the ride fairly unpleasant at low speeds on anything but first class roads; but also making the sedan rock steady in really fast corners. One of the staff, while taking mountain curves at 65 or 70 mph with perfect control, expressed the doubt that his XK-120 would comport itself any better—which is saying something when the Riley's weight (3300 lbs, ready for the road) is considered.

Brakes

. . . Another point at which Riley practice and the average driver part company. Heavy pedal pressure was required on the model tested. Even then the car wouldn't stop quickly enough and this seems a fairly typical complaint. Why this should be so is difficult to determine. The brakes are two leading shoe, hydraulic front and mechanical rear, but are 12 inches in diameter and ribbed for cooling—certainly and efficient enough set-up for good stopping. Still, the fact remains that more braking power is necessary in a 100 mph car.

The drums have normal adjust nuts on the inner surface, plus centering set screws for the purpose of seating each brake shoe flat against the drum. It is quite possible that proper adjustment of these nuts and screws give the highly efficient braking claimed by the factory. If not, then the cause of the trouble would seem to lie in the brake lining material itself.

Notes and Comments

Riley has sleek lines . . . looks like good breeding. Overall height . . . 4′ 11½″ . Foot ventilators leak cold air at night, even when closed, but have been improved as of latest Earl's Court Show. Padded top: nice idea. . . . metal under padding drilled with half-inch holes, to dampen vibrations which may creep into top. Foot rest for driver's left foot comes in mighty handy . . . Nuffields should use this on their MG. Ash trays in doors for driver and three passengers, but driver's ash tray (when open) gets in the way when left hand reaches for dashboard dip-switch. Side panels on hood (bonnet) easily removed to tune carburetors, etc. . . . car could use oil bath air cleaner in dusty regions . . . the "silencer" on delivered models gets in the way of the throttle linkage. Fan belt looks difficult to replace—it isn't, not if you know how. *Two* mufflers! One of them 40 inches long! Good idea, as there is practically no back pressure, but the long muffler has a tendency to scrape in sharp pitched driveways and would probably drag in the snow in the Middle West. If you like to take care of a car and drive it a long time, the Riley is the car for you. Should sell for $700.00 more if other imports are any criterion. Riley won't do for the average American and his wife, but for the connoisseur . . . the individual . . . he'll call it a true thorobred . . . and, of course, it is.

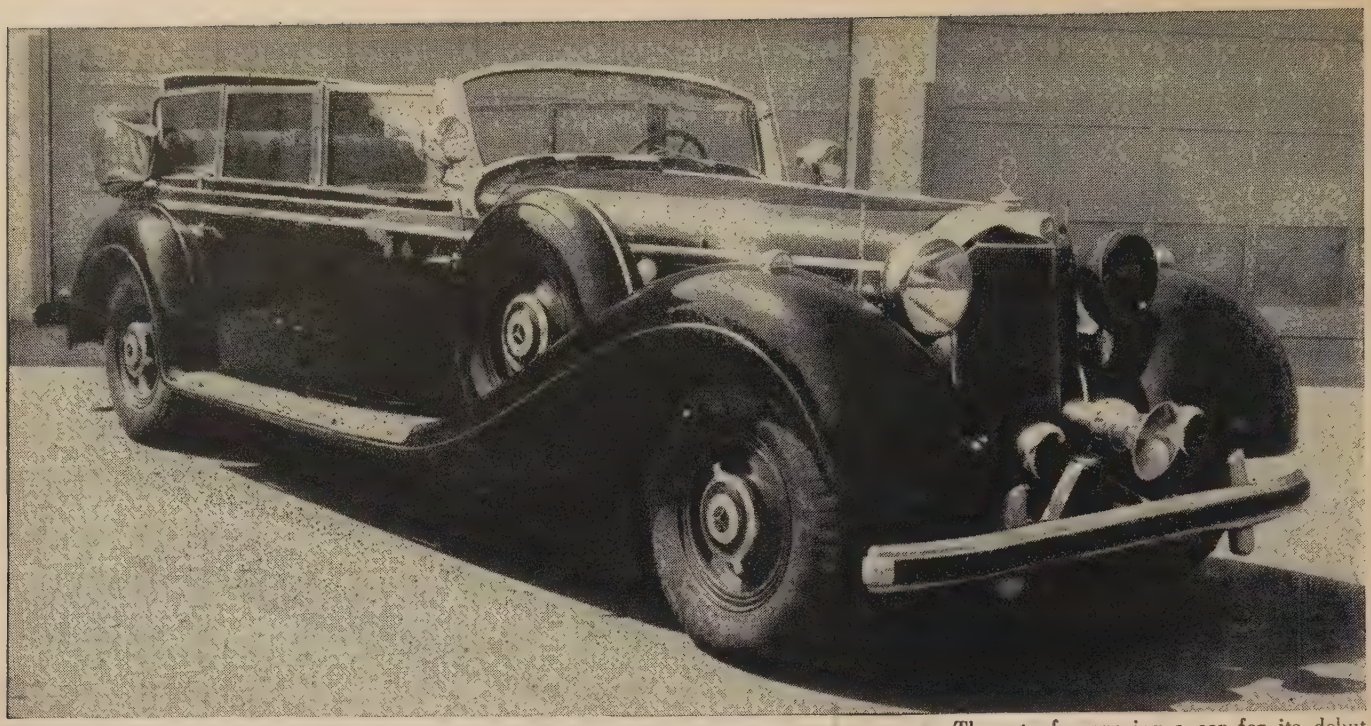


PHOTO COURTESY 20TH CENTURY FOX

This 5-ton Mercedes appeared in the 20th Century Fox film "The Desert Fox."

You Saw Them in . . .

Did you wonder where those unusual cars in the movies came from?

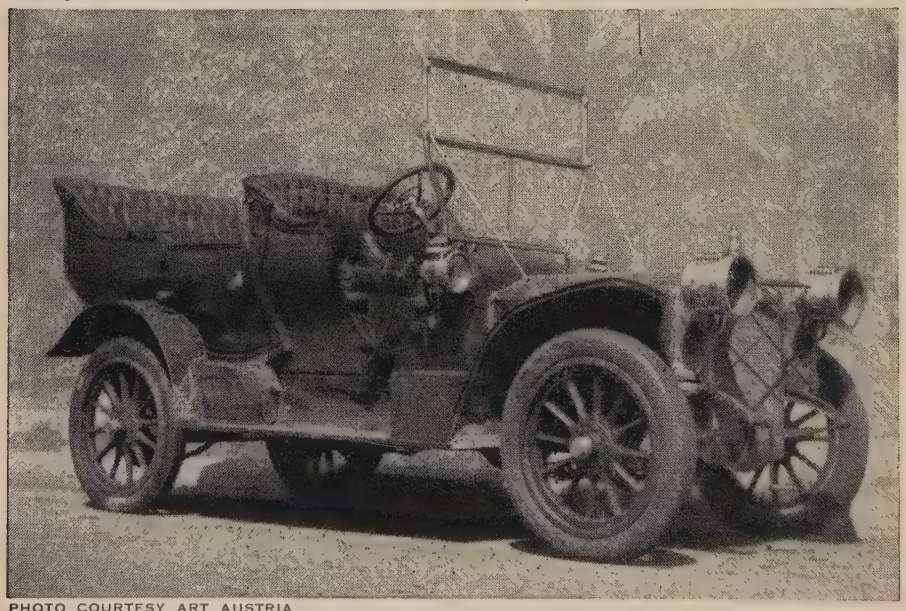
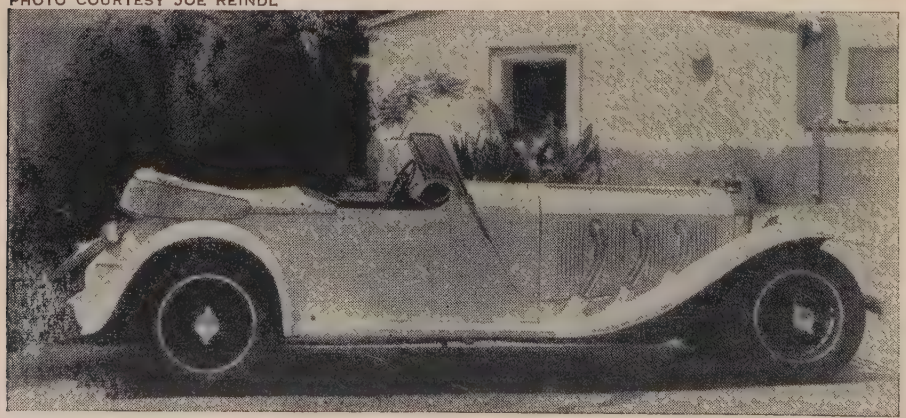


PHOTO COURTESY ART AUSTRIA

Above, 1906 Thomas Flyer owned by Art Austria. Below, the 1928 Mercedes used by Paramount.

PHOTO COURTESY JOE REINDL



The art of preparing a car for its debut in front of the cameras is exacting and often exasperating, for there must be absolutely no highlights or reflections. Unless the paint, glass and chrome are completely toned down, a complete (and highly wasteful) junking of exposed film may result, with unpleasant consequences for all concerned. Hence, all possible care is taken in the preparation of the car to be used, and this duty generally falls to the Transportation Department; altho in some studios, the Property Department performs this service.

In order to tone down the car, several methods are used—the most popular being a complete spray with liquid wax. This, of course, is not rubbed out, but is left dull, permitting the lines of the car to be photographed cleanly but with no reflections. Some studios spray *buttermilk* on the cars instead of wax. The removal of buttermilk is easier, but we can't help wondering about the goat-like aroma on a hot summer day!

Because safety glass has a bad habit of showing up in the finished film and tends to dull the images of the car's occupants, it is almost always removed so that close-ups may be taken without interference. If, however, the car is to be photographed in motion, and the elaborate coiffures of the feminine stars are to remain unruffled, clear plate glass is substituted, which permits good photographic effects and eliminates the otherwise cyclonic action of the wind.

Quite obviously, to obtain complete freedom from street and engine noises, some form of legerdemain is necessary, so the process shot or transparency is used. This allows the use of "canned scenery"—backgrounds from all over the world—saving the expense of shipping an entire unit abroad simply to get a few atmosphere shots. The car is placed directly in front of a special screen on which a projector beams the "canned" background. This picture appears on the face of the screen directly behind the car, and is then photographed by regular cameras placed in the normal positions. If the road (on which the car is supposed to be travelling) is twisty, a man with a small red light stands in front of the car, out of range of the cameras, and signals "turns" to the "driver." This synchronization can quite often be a difficult bit of business, and several rehearsals are usually necessary. The car may be rocked by hand in order to simu-

late movement, or a special rocking platform may be used . . . supplementary sound is dubbed in afterwards.

Night scenes are much more expensive to shoot than day scenes . . . apart from overtime pay, special equipment of all sorts, including heavy duty lighting is necessary. Therefore, whenever possible, these scenes are shot during the day using special filters. Then when the pictures are developed, they appear to be genuine night shots.

Headlights are always used to give authenticity to this type of photography, but the ordinary headlight will not do, as it tends to flood, and sometimes, because of its wide field, glares into the camera lens. To avoid this problem, aircraft landing lights are often used, of 12, 24, or sometimes, 48 volts. As the ordinary automotive electrical systems are only 6-volt capacity, a special bank of batteries is installed in the car. These lights then shoot out a sharply defined beam which is ideal for this sort of photography. Occasionally a paper filter or paint may be used on the headlight lens, but this is not always satisfactory, particularly during a rain scene!

When a car is to be muddied, fuller's earth is smeared on the finish, as it has the dual advantage of being an excellent photographic duplicate of the real McCoy, and is easy to clean off when the sequence has been completed.

Accident scenes or wrecks are often posed by some previously clobbered iron obtained from junkyards, but when the action takes place before your eyes, it is a safe bet that miniatures are used, or that the crash is staged by stunt men wearing safety belts and protective padding, Duplicate cars are a must in this phase of the business, as by their use it is possible not only to save large sums of money, but to avoid any chance of injury to personnel.

Fortunately, none of the immediately foregoing practices were needed when Metro-Goldwyn-Mayer recently used the exceptionally clean 1917 Pierce-Arrow touring car owned by Elliott Weiner, Pacific Palisades, California. This car, completely restored by Mr. Weiner, has just finished work in two M.G.M. pictures, "The Great Caruso" and "Excuse My Dust." A Model 6-48, originally costing $5,000, it has a bore of 4½ in. and a stroke of 5½ in. It develops 48 hp and is an extremely reliable and comfortable machine.

The 1906 Thomas Flyer is owned by Art Austria, Venice, California, and is one of his large collection available for movie rental, having perhaps as much work before it as it has history behind it. During the 1906 San Francisco earthquake and fire, this car was owned by a prominent shipping lines family of that city, and was commandeered by the authorities to carry both dynamite and Red Cross supplies. It performed faithfully thruout the emergency, after which it was returned to its owners who used it for many years thereafter. Happily, it was never traded or sold, and when Mr. Austria acquired it, was still the property of the original owners.

Its original cost was $3,500, and it is powered by a 4-cylinder T-head engine of 50 hp. The bore and stroke are both 5½ in. and when new, this Thomas could do 60 mph. It has outside cams, exposed timing gears, and a novel pawl and ratchet device on the rear wheels which was the forerunner of the modern Hill-Holder. This was controlled from the driver's seat by a small hand lever, and was featured prominently in the early day Thomas advertisements.

Two years after the manufacture of Mr. Austria's car, a Thomas Flyer was the winner of a "Round the World" race which

(Continued on page 38)

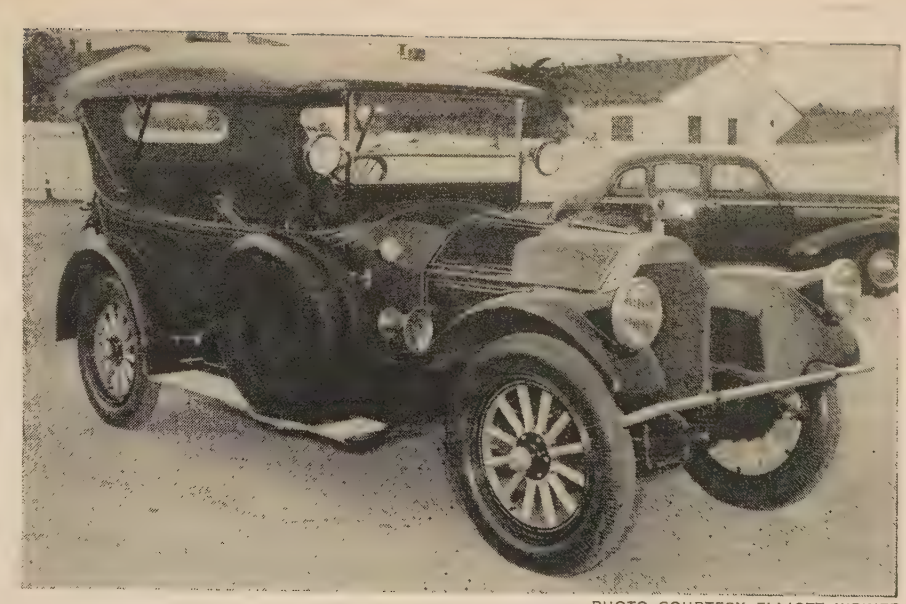


PHOTO COURTESY ELLIOTT WEINER

Above, 1917 Pierce-Arrow touring car seen in "The Great Caruso" and "Excuse My Dust."

PACIFIC AUTO RENTALS PHOTO

Above, Lee Tracy in "Turn Back the Clock." Below, 1924 Minerva in "Love That Brute."

PHOTO COURTESY 20TH CENTURY FOX

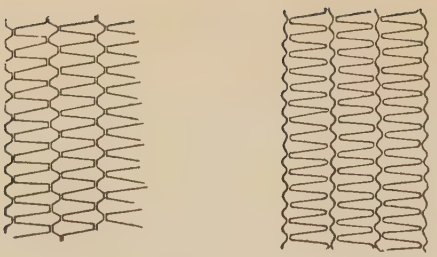
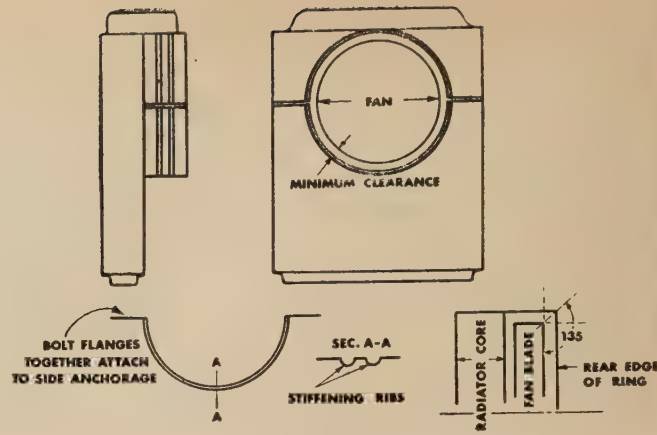


Figure A

Cooling Modifications

for the Jaguar XK-120



Sketch B

The following notes and observations are taken from a letter to **Road and Track** written by L. P. Saunders, Chief Engineer of Harrison Radiator Company, Lockport, New York:

Dear Mr. Bond:

Was interested in reading on page 23 of the May issue of "**Road and Track**," your comments concerning the cooling problem on the 1951 XK-120 roadster, per letter from Mr. J. G. Harriss of Dallas, Texas, and have made an analysis of the cooling system of these cars as best I can without test data accessible to me, and while in sympathy with your proposal that a larger fan be fitted, believe you will find upon investigation that this is not possible due to the clearance under the overhanging part of the top tank of the radiator.

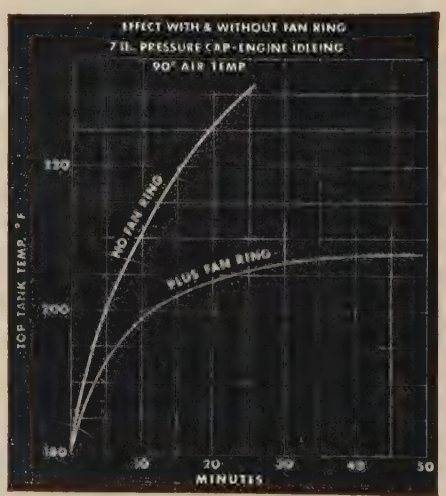
With respect to a larger air inlet to the radiator, this will not be a solution as for all satisfactory cooling systems the radiator should be the gate which controls the air flow thru the system, for if a restricted grille is used with a smaller net air opening than the radiator proper the air will pass thru the radiator without obtaining the maximum temperature rise possible for the particular metal configuration, the same holding true if the air outlet from under the hood is the limiting factor. It is true that a larger radiator with more capacity will only increase the time interval slightly before overheating takes place as you say, (this should be qualified however, by the further statement "without an adequate air supply"); therefore in a cooling system design of this type it is as well to take advantage of as much radiator material as possible which can be applied in the space.

The enclosed Sheet A shows the radiator configuration of the core as fitted to the production machine (1), and the configuration of a radiator core (2), which is manufactured by the Harrison Radiator Division of General Motors and is obtainable thru the United Motors Service organization, (Part No. 4239 will have to be cut to size). The total amount of surface in the production core manufactured by Marsden Excelsior to Harrison Radiator general design (which has a frontal area of 2.06 sq ft.), is 111 sq. ft., and core No. 2, again with the same frontal area, has a total area of 131 sq. ft., this resulting in an increase of approximately 18% in the air-swept material, and a low air velocity thru radiators with high ratios of I/D presumably combine both radiation and convection effects, resulting in improved cooling. The net increase in the copper content of the No. 2 core will be approximately two pounds. As the distance between the water passages is the same for both of these cores obviously the water passage area is not reduced, therefore the water flow rate will not be changed, or the water content. This change in total surface is brought about by in effect changing the fin pitch from 8 fins/inch to 10 fins/inch. Radiators are no more efficient than the amount of air which can be passed thru them per unit of time, therefore it is most necessary to take advantage of every possible way in which a few degrees temperature reduction may be achieved, and to this end suggest that some modelers' clay be put on the top tank of the radiator with some wax paper over it and the hood then closed. This will graphically illustrate the height of the baffle which should be built and attached to the top tank so that all the air which enters the plenum chamber between the inside of the grille and the face of the radiator will go thru the radiator and not around or over it.

To increase the amount of air which is drawn thru the radiator by the fan, a ring should be provided as small in diameter as possible which will embrace the fan and still provide sufficient clearance so that when the engine moves on its flexible supports the fan will not strike the inside of the ring. This ring should project back of the radiator core far enough to intersect a line, per Sketch B which is also enclosed. This procedure will not increase the amount of fan horsepower required, but merely assure that all the air which the fan is capable of handling will be drawn thru the core and not from the engine side of the radiator for recirculation purposes only. The use of a fan ring will increase the air flow thru the radiator proper approximately 20%, and for ease of installation can quite satisfactorily be made in two pieces which can be bolted together thru the medium of outturned flanges on each half, these again being used to support the ring by use of brackets which should be attached to the side anchorage of the radiator. This ring should be ribbed for stiffness, and either all burrs removed from the inside and outside edges, or a rolled-in bead be provided on the discharge side only. The supporting brackets should be rigid enough so that there is no relative movement between the ring and the core which will preclude any possibility of cutting at this point.

It may be well to investigate to see whether or not ways and means can be found to change the position of the water pump on the engine, dropping this down so that a larger fan may be used, or if the top tank can be reversed and the overhang project forward.

A fan ring was originally conceived for use on the old Lafayette cars made by the Lafayette Company of Indiana, as it was found like the XK-120 the fan was so close to the radiator that if a full shroud were used the corners of the radiator core would be completely inoperative at high speed, whereas the use of the ring does not cut off this useful surface. A Graph C is enclosed showing the cooling obtained under idle conditions with a machine with and without the fan ring. This condition does not hold true for all automobile installations as each one is a very specific study in itself; however, the fan ring will do no harm on the XK and may in all probability be very beneficial.

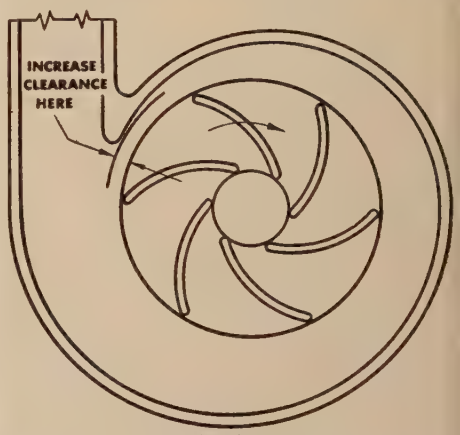


Graph C

As far as it is possible to determine the fan runs at a speed of .9 of engine speed, and additional cooling may be obtained by changing this ratio and running the fan at a higher ratio. In the event a change is contemplated would like to suggest 1.1 as it has been found that if the fan runs at engine speed such noise as is created by the fan invariably tunes in with some other noice frequency of the engine at a speed and creates a most unpleasant situation.

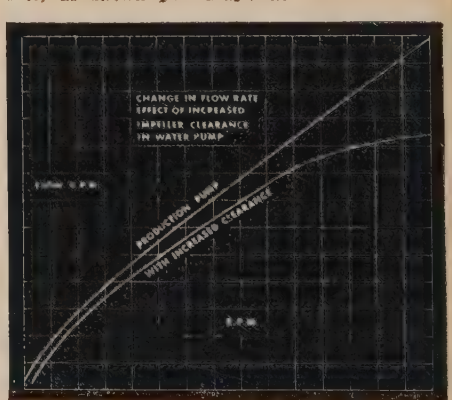
To return to the statement that the radiator should be the gate for controlling the air flow thru the system, the free area thru the grille is estimated at 86 sq. ins., the free area thru the production core 86½ sq. ins., and of the proposed core 82½ sq. ins., which should resolve in a satisfactory condition. Under no circumstances should any license plates, badges, etc., be placed in front of the grille which could possibly impede the air flow.

To eliminate too high a vacuum in the inlet side of the water pump under this increased speed condition, Sketch D is enclosed showing



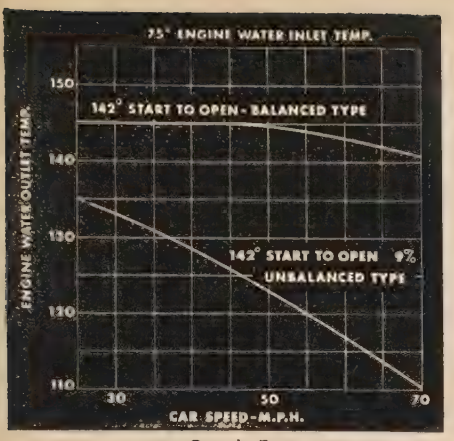
Sketch D

the manner in which the diameter of the impeller should be reduced to eliminate excessive suction and consequent high pumping at high rotative speeds. It has been found that this condition does not materially affect the slow speed operation of the pump, adequate water being supplied for the heat output under these conditions, but does very materially improve the high-speed condition as the water delivery tends to flatten out instead of continue in a straight line, as shown per Graph E.



Graph E

Am not conversant with the type of thermostat with which this engine is fitted, however, am enclosing a sketch showing the performance of a balanced versus an unbalanced thermostat under different operating conditions, which may be enlightening. By a balanced state is meant a design in which the working area of the head of the bellows is equivalent to the

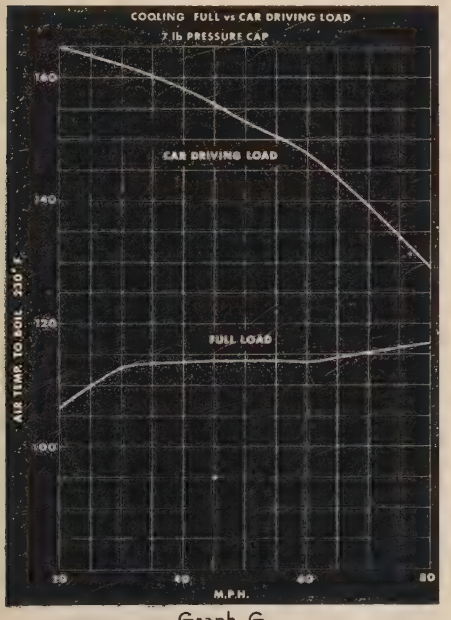


Graph F

exposed area of the underside of the valve. In this way a balanced pressure is obtained on the control side of the thermostat, and water pressure will not blow the valve open, this being a function of temperature control, Graph F.

To sum up, the following table shows approximately what may be expected to be obtained with the proposals referred to at full load:

Change in radiator core	- 8°
Fill in space between top tank and hood	- 3°
Use of fan ring	- 4°
Increased fan speed	- 4°



Graph G

Graph G showing representative curves of cooling at full load versus car driving is also enclosed, and the distance between these two curves at any one point represents the additional cooling capacity available for loads in excess of the car driving load.

Have personally been very much interested in sports cars for many, many years and will be grateful if any of these ideas proposed are carried out, to learn the results of these changes.

Very truly yours,
L. P. Saunders

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	Vertex	55.1	66.4	60.2	64.0
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	Vertex	59.5	69.0	67.0	69.2

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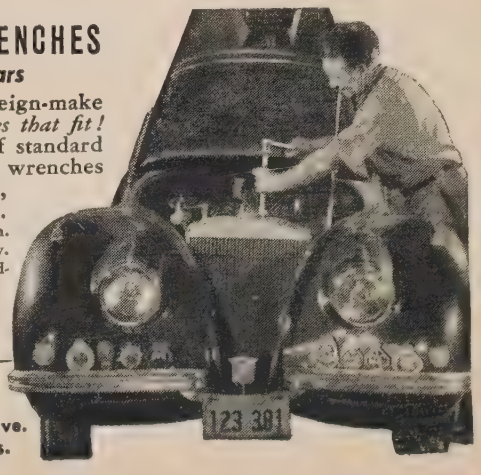

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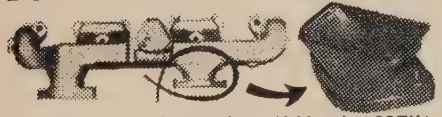
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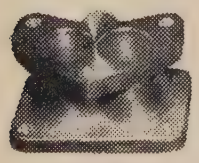
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Some General Hints on "Hopping Up" Your Car

The steady stream of letters we are getting indicate that a lot of people are interested in getter better performance out of their stock automobiles.

Obviously, some engines are better adapted for modifications than others, either from the standpoint of durability or availability of speed equipment.

However, the point too many people overlook is this: it is easy to get more horsepower from practically any stock engine, but you cannot do so without sacrificing somewhere. Stock engines are designed and built to satisfy the majority of owners, and what the majority of owners really wants is more torque . . . not more horsepower. The constant goal of engine development is to get the most torque with the least peak horsepower loss. When you hop up an engine, most of the changes give more horsepower at the higher speeds, but unfortunately these same changes give lower horsepower at speeds below, say, 3000 rpm. This in turn means a drop in maximum torque in this speed range. The result: a better clocked 0 to 60 mph thru the gears (where horsepower counts) but a slower 10 to 60 in high gear (where torque is of paramount importance).

A further point . . . torque is dependent mostly on displacement. BMEP (brake mean effective pressure) is an index of engine efficiency in terms of torque per cu in. It is remarkable to note that all engines today have nearly the same bmep, regardless of detail design differences . . . provided the timings are similar. The moral? Merely this: if you make changes (such as altering valve timing for more power at higher speed), it is advisable to increase the displacement (in order to offset low speed torque loss). That is, of course, if you are still pulling the same weight (of vehicle) and do not want a loss in high gear acceleration or hill climbing ability.

Another interesting fact which has emerged from hop up activity is that the bored and stroked engines do not show a gain in peak bhp in proportion to the increase in size. The reasons are many, but they include limitations of the port size in the block and considerations of piston speed. To give an example, a stock 239 cu in. Ford V-8 (3 3/16 x 3 3/4) was modified to give 180 bhp at 4800 rpm. A 284 cu in. V-8 (3 5/16 x 4 1/8) given as near the same modifications as possible developed the same peak bhp—at 4200. The power in both cases fell off as the peaking speeds were exceeded.

Too many of our readers seem to want *a little more of everything, with no sacrifice of anything*, and at moderate cost! This is not possible, and there is no need of discussing this point. It *is* possible to make *some* modifications for improved performance with *some* slightly objectionable features at moderate cost. The simplest place to start is with higher compression ratio, easily obtainable by either milling the head or replacing it with a special head made for this purpose. Higher compression gives both more torque and more horsepower, with the additional advantage of better gasoline mileage. The disadvantages include the necessity for frequent carbon removal and use of premium grade gasoline. There will also be some loss of smoothness unless the spark is retarded, which, of course, cancels nearly all the gains. Higher compression ratio on an L head engine of large bore and short stroke may give no increase in peak bhp (and its corollary, no increase in top speed) unless special means are taken to insure good breathing for maintenance of volumetric efficiency. Such items are beyond the scope of low cost minor modifications and will be discussed in later articles.

There is no hard and fast rule for satisfactory compression ratio. However, 8.0 to 1 is about as high as the reader should go. The amount to be milled from the heads of two cars (to give approximately 8.0 to 1) is given in the following table:

Engine Make	Initial Comp. Ratio	Displ. cu in.	Amount to be milled for 8.0 to 1	Remarks
Buick	6.9	262½	.110	
	7.2	320	.080	
Chevrolet	6.6	216	.115	Intake valves must be "seated" at TDC
	6.7	235	.115	

Note: the pushrods should be shortened by the amount milled, or a shim equal to ½ the amount milled should be put beneath the rocker arm supports.

The resultant gain in horsepower and torque depends on the initial compression ratio, but will be between 5 and 10%.

Another simple method of increasing power is reducing muffler back pressure. In some cases—particularly 6 cylinder cars—the gains are small, while some 8 cylinder cars, gain as high as 10% in peak power have been recorded—and even some improvement in peak torque. The straight-thru muffler is virtually equal to a "straight pipe," and in the large sizes the noise is not greatly increased. On V-8s, the use of two stock mufers gives almost as much improvement as two straight-thru types, and, of course, the exhaust note remains as quiet as the factory installation.

There is some confusion regarding the value of adding multiple carburetors. The Buick "Compound" carburetor arrangement (1941, 1942) was a worth while attempt to increase peak horsepower and still keep low speed performance (where one carburetor is more desirable). Keeping the somewhat complicated linkages in correct adjustment was a major problem, so the idea was dropped.

Special manifolds are available for almost every late model car and, properly adjusted, will denitely improve both acceleration thru the gears and higher gear acceleration above 60 mph (approx.). Since multiple carburetors increase the peak horsepower, a gain in top speed can also be predicted in proportion to the square root of the bhp gain —i.e., 16 more bhp = 4 mph top speed increase. However, it should be pointed out that more people are dissatisfied with this one change than any other. Perfect linkages, synchronization, tuning, and general condition are necessary to avoid erratic running and poor idle. But there is no reason why this cannot be attained . . . with *careful* installation.

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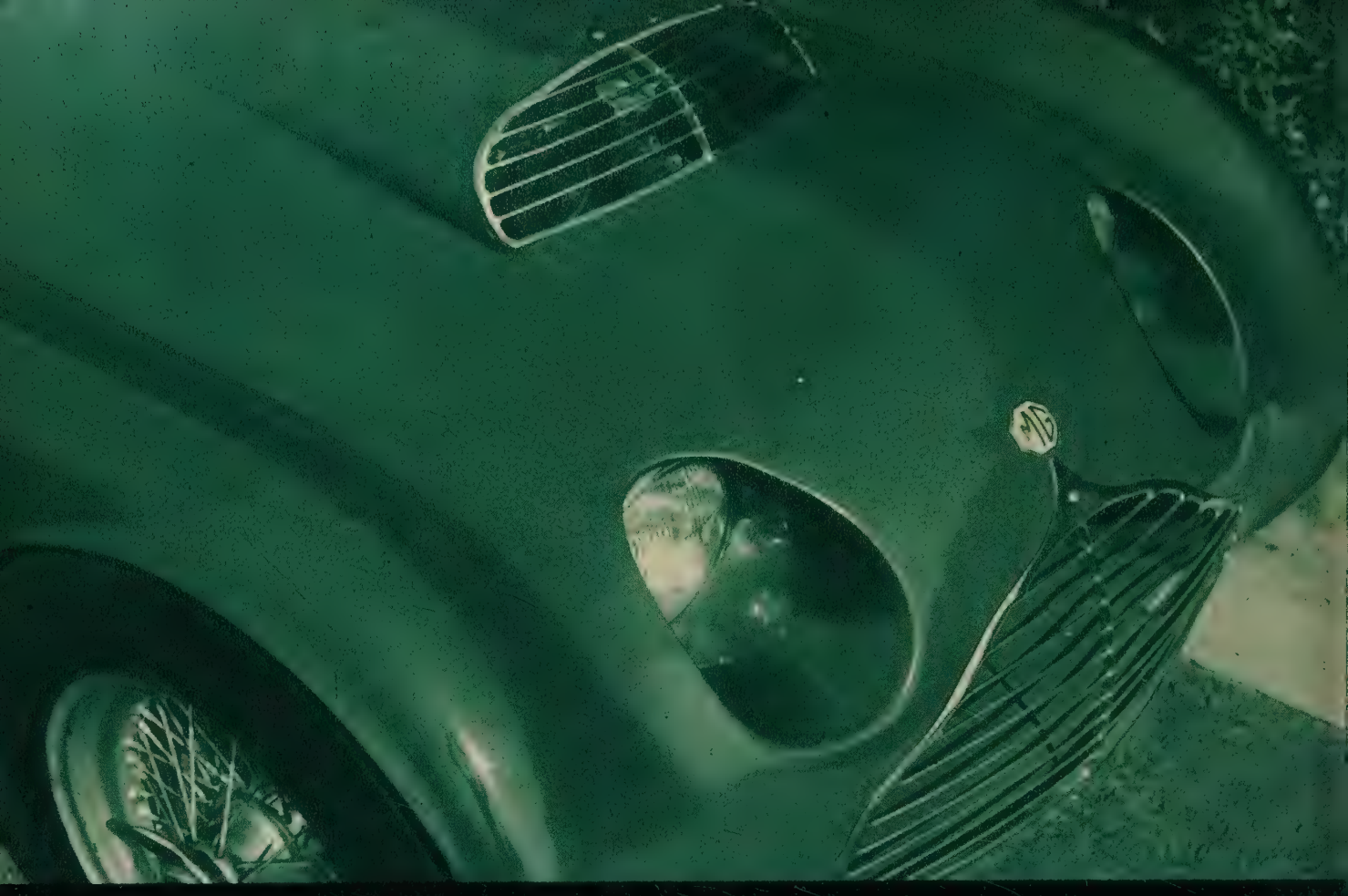
Reno Road Race

Tom Carstens in Cad-Allard leads Jaguar



REVOLUTIONARY TC

The evolution of John Edgar's MG TC (*Road and Track*, May 1951) is one of the most fascinating sports car stories on the Pacific Coast . . . . if not the whole of America.

One of the first TCs to appear on the Western slopes—late in 1947—the car was only a few months old when John started modifying . . . . a process which has gone on almost without interruption ever since.

An Arnott blower was installed (in early '48) and the wheels cut down from 19 to 16 inches . . . . this was another near first for Edgar; very few MGs having had their wheels "shrunk" up to that time. In this trim, the car was officially timed at the Dry Lakes: 93 mph . . . . a speed which John Edgar believes to be unsurpassed to date. John wants it known that he's not claiming a record . . . he merely states that if there have been faster MGs at the lakes, he has yet to hear of them.

The next step for John was to raise the compression ratio to 12 to 1, which had rather immediate results. The supercharged car "ran two blocks and then blew up!"

About this time, Edgar got in touch with Ernie McAfee (McAfee Engineering Company) and decided that the best thing to do was put the car (which still looked like a TC) in McAfee's hands—where it has remained to this day.

That was in March 1950 and the poor little car has hardly had a moment's peace since . . . . tho a glance at the cover photo will convince you that all the face-lifting and modifying has been worth while.

McAfee installed a modified Italmeccanica blower, lowered the compression ratio to 6 to 1 and replaced with alloy the stock engine bolts. These lighter, stronger bolts were necked and relieved for 20% greater strength and consequent engine rigidity.

Brakes came next: reworked Bendix aircraft. After adapting the shoes to fit the TC hubs, drums were machine-turned from aluminum stock—giving a diameter of 11 inches and a width of 2½ inches . . . plenty of stopping power.

Ready to run, the TC (now bearing its famous number, 88), captured 2nd in its class at Santa Ana Road Races and 1st in its class at El Segundo Acceleration Trials. Test runs during this period showed that the temperature rise of the air thru the blower was too high: some 350°F. So, McAfee redesigned an aircraft oil cooler and connected it between the supercharger and the combustion chamber. The drop of 150° seemed about right so the intercooler has been retained as installed. What actually happens in this device is that cooling water (from a separate radiator) is run thru coiled copper tubing in the cooler, and the air which has been compressed (and consequently heated) by the supercharger is blown across the coils and cooled to obtain better volumetric efficiency.

Evolving the intercooler was not as simple as it sounds. Things often work out differently in practice than they appear on paper . . . the intercooler radiator was found to be too small. As an expedient, McAfee tried dry ice, which worked fine while it lasted, but the frozen CO_2 vanished in long races. The cure was the installation of a larger radiator.

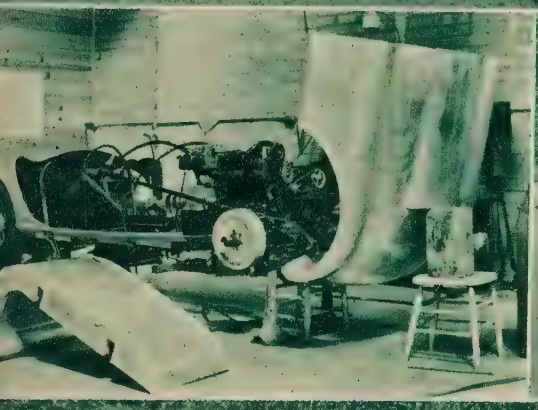
In this form 88 took 2nd in its class on its second Sandberg Hill Climb try, proved its reliability by running second (in its class) to Kimberley's 2-litre Ferrari at the April Palm Springs Road Race, and continued its sweep by running another class 2nd at the following Sandberg Climb, another first in class at El Segundo Acceleration and a first (class) at the 2nd Annual Pebble Beach Race.

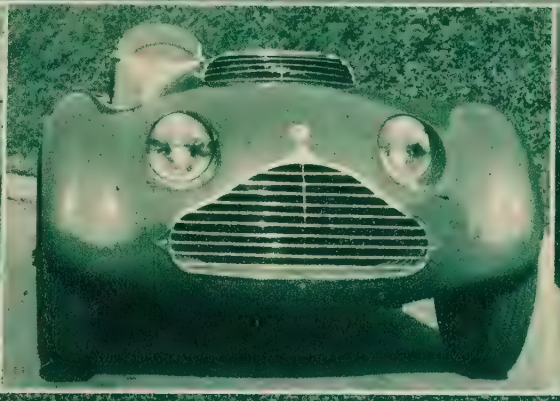
Meanwhile, McAfee and Edgar gave serious consideration to the idea of body style changes. Calculations on the MGs frontal area and drag coefficient showed that 88 was being run at a great disadvantage. Experiments with belly pans and the like finally prompted McAfee to design an envelope type body. When Edgar saw the plans, he had them rushed to Emil Diedt, well-known race car builder. Diedt completed the light aluminum "skin" for 88 in a scant 30 days and the car started strongly at the recent Palm Springs Road Races.

Jack McAfee (no relation) tooled 88 from way back in the field at the start, to a good position among the leaders on the 9th lap. Unfortunately, one of 88's pistons had a faulty center and McAfee was forced to retire for the day.

The fact remains, 88 is not only one of the most interesting, but one of the most beautiful sports cars running today. Instead of ending its career, the four-year-old car seems to be at the very beginning of its best racing days.

88





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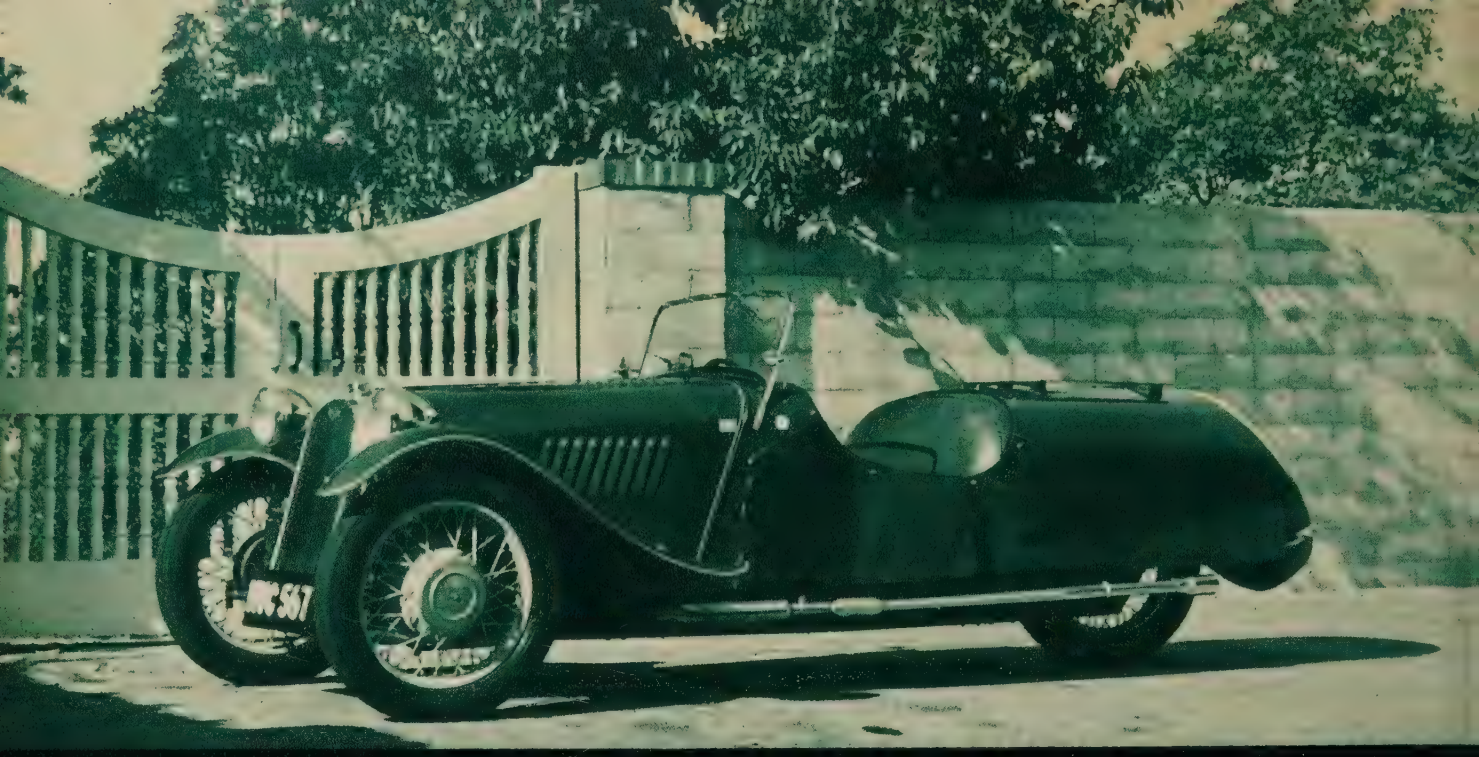


MORGAN THREE WHEELER

An item almost as strange to our continental shores as the narwhal or the unicorn, but without the spectacular radiator ornaments of those creatures, is the Morgan three-wheeler. Still more scarce is a superbly clean one, but fortunately for the sidewalk car inspectors, such a specimen daily makes its rounds in the effervescent Los Angeles traffic.

Owned by Walker Edmiston of North Hollywood and driven by him with an occasional clashing of its square cut gears, this little Morgan, like the Davis, bears but one small badge of shame, a motorcycle license. For some peculiar and darkly mysterious reason, the State of California considers any motorized vehicle with less than four wheels a motorcycle, and despite any and all anguished wails of outraged three-wheel car owners, the State stands firm.

Unlike early Morgan three-wheelers, which were powered by motorcycle engines mounted where bumpers normally sprout, this 1948 model sports a Ford Anglia flathead under the hood, a most logical place for an engine, in our opinion. Developing 23.4 hp, this modest powerplant will rocket the Morgan along at 70 mph flat out, but according to Mr. Edmiston, this mad pace detracts somewhat from general comfort, and cruising between 50 and 55 mph is less liable to rotate one's kidney.

A 6 gallon fuel tank (under the hood, together with the tool box) is sufficient to give this minuscular jewel a normal cruising range, as from 35 to 40 mpg is easily obtainable. The steering is very quick indeed, and the three-wheel brakes do a fine job of halting all progress when required. (As for driving a three-wheeler fast on wet cobblestone streets copiously laced with streetcar tracks, this author can only tell you from sad experience . . . DON'T! It was in Liverpool during 1934 when this knowledge sank in after a short but disastrous drive, but *that* is another tale!)

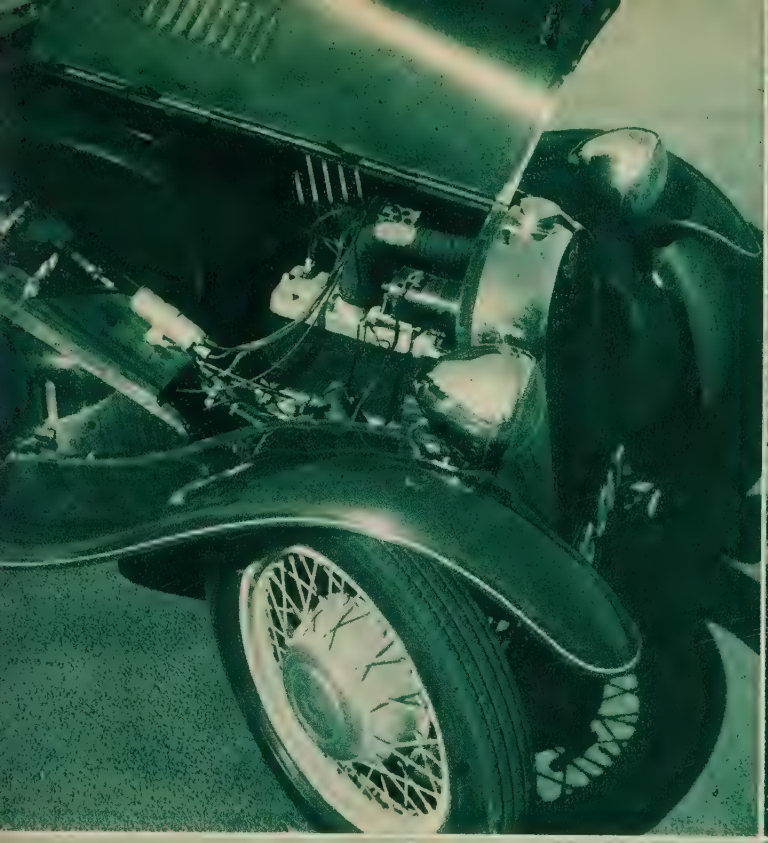
Like other Morgans, the front suspension combines springs and shocks in one unit, and frequent applications of lubricant are *de rigeur*. Chain drive to the lone rear wheel adds somewhat to the general clatter, but so far has proved quite reliable. The tires are 4:00 x 18s, and the top reposes a la XK-120, behind the seat. No side curtains are provided, but it must be presumed that Mr. Edmiston owns a good Turkish towel for mopping-up purposes after driving in the California rain.

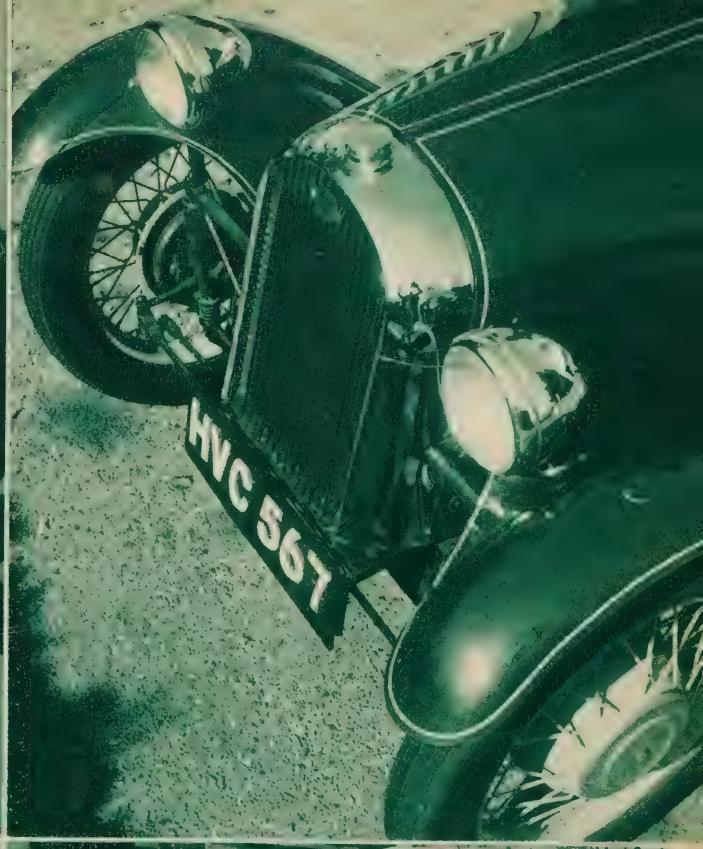
The baggage rack thoughtfully attached by the makers is sturdy and functional, but for long trips, a choice would seem to loom between a barren wardrobe or a larger car. The seating position is quite comfortable, and as on so many British cars, leather covered air cushions softly support one's . . . ah . . . natural contours.

There is some reason to call the little three-wheeler a mobile lumberyard, since the floorboards, engine room side panels, and most of the frame (with the exception of the two main side members which are of steel) consist of stout British hardwood, but even with all this arboreal substratum, there are few rattles or squeaks.

In finishing this learned discourse, one word of advice . . . do NOT lean against the left-hand side of this potent little wagon as you will draw back a barbecued shin, for that shiny pipe harbors some highly tropical exhaust gases.

. . . 'round a pylon at Apple Valley Gymkhana.

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Start of First Heat—Soulas (BMW), Collazo (Healey), Bonomi (Cissy), and Bollaert (Jag).

Antique—Julio Gatti on his restored Bugatti.

MENDOZA

Into the "Land of Sunshine and Good Wine" poured a horde of race enthusiasts September 23rd to see and take part in the first sports car race ever held in Mendoza City, Argentina.

The course (2.9 miles per lap), winding around a beautifully scenic park, is safely wide with a good surface layout, permitting 70 mph averages.

Any anxiety the sponsors may have felt was relieved by the opinions of the drivers and spectators during and following the race . . . all looking forward to another event.

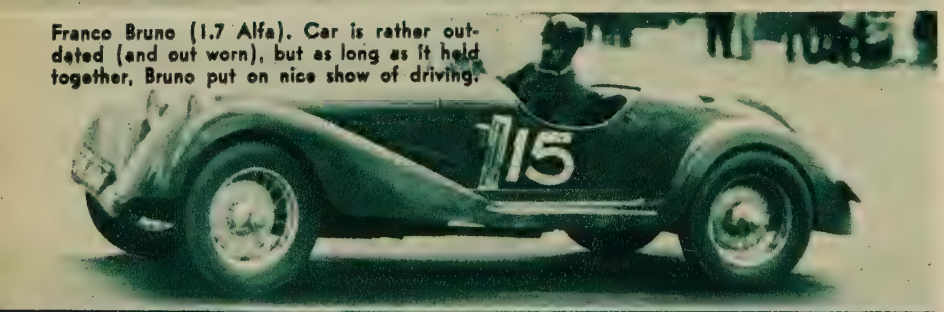
QUALIFYING TRIALS (Saturday, the 22nd) found Carlos Perez de Villa (2.9 Alfa) gaining the pole as he lapped at over 74 mph (2:22.40); Adolph Cruz (Jaguar) with a time of 2:27.60 in 2nd place, followed by Emilio Soulas (BMW), Lucio Bollaert (Jaguar), Jose Collazo (Healey s/c), and a Jaguar, a Cisitalia and another Jaguar . . ., driven by Cameno, Bonomi and Millet

Time trial troubles plagued two cars, putting them out for good. Calise, driving the 3.6 Delahaye, which took a third at Buenos Aires International Races, broke his differential gears, condemning himself to a spectator's role on Sunday. He made up for that by shooting at other drivers . . . with his camera. The other mishap came when Julio Gatti tried to qualify his old Bugatti and succeeded in tearing a rod at the end of the main stretch, and punching a hole in the crankcase. Oil from the Bugatti's innards spilled at the entrance to the hairpin turn and sent quite a few of the boys spinning fiercely, tho all held their mounts under control (except for Sagesse, who spun into the hay bales, slightly damaging his MG).

THE RACE was made up of three 8-lap heats, the first of which opened with Perez and his Alfa on the pole. The Alfa was slow getting away because of a broken gearbox which left only 3rd and 4th gears useable. Schwelm (Jaguar) took over first, which he held, earning as well the fastest lap record.

The second heat found Schelm on the pole and he finished this one 1st, too, followed by Soulas (BMW) and de Villa (Alfa) who started and finished in 2nd and 3rd spots.

Only ten cars survived the burning pace of the first two heats, the most disappointing forfeit being de Villa's Alfa. DeVilla, of

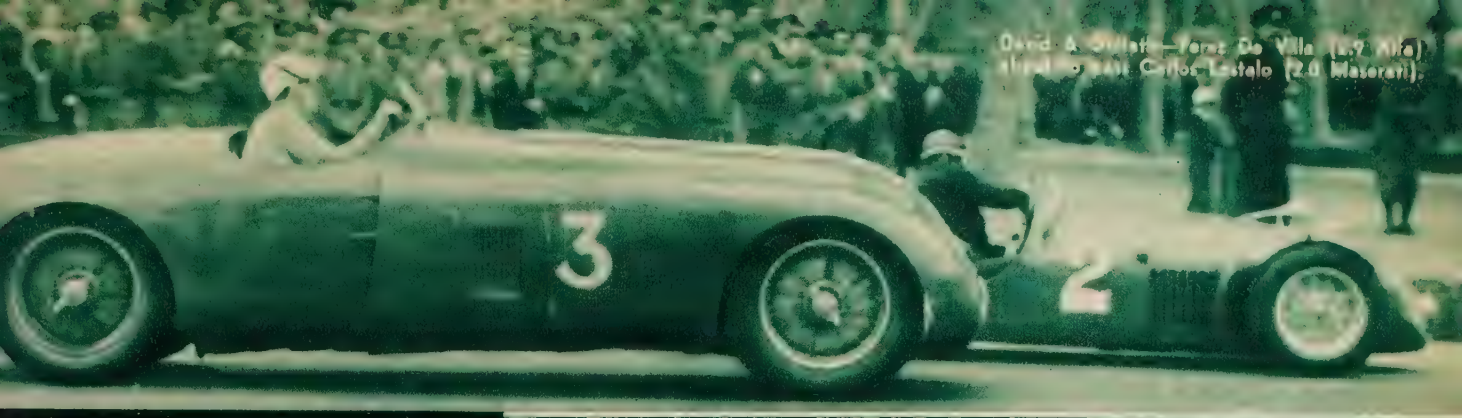


Franco Bruno (1.7 Alfa). Car is rather outdated (and out worn), but as long as it held together, Bruno put on nice show of driving.

Tesoriero, on a Mille Miglia [illegible] during the 2nd Heat [illegible]

Here I go!—Caamano looks puzzled as his Jag starts to spin after hitting an oil spot.

[illegible]oberto Bonomi (Cisitalia), former Argentine 1500 cc champion, takes [illegible] easily.



David A. Millet—Perez De Villa (2.9 Alfa) chasing Carlos Lostalo (2.0 Maserati).

ORTS CAR RACE

by Dr. Vincente Alvarez

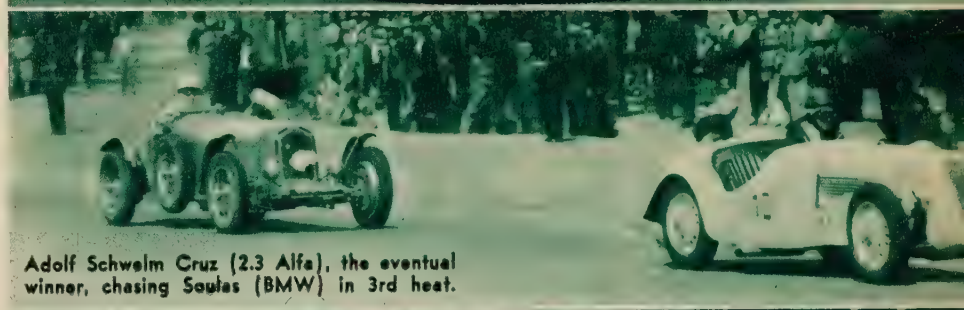
Lucio Bollaert (Jag)—car is actually going backwards after spin, causing deceptive lean.

course, used good judgment in withdrawing . . . the gearbox was acting most erratically at times, forcing him to drive while holding onto the gear-shift lever. De Villa said, "a race course is no place for a one-handed steering exhibition" and then he vowed he would do better next time.

In the third heat, to everyone's amazement, Soulas (BMW) jumped ahead of Schwelm's Alfa at the start and fought desperately to hold the position. Schwelm finally repassed him on the fourth lap and held 1st to the finish. Lostalo (Maserati), too, managed to squeeze by Soulas before the end, giving Schwelm first, Lostalo 2nd and Soulas 3rd.

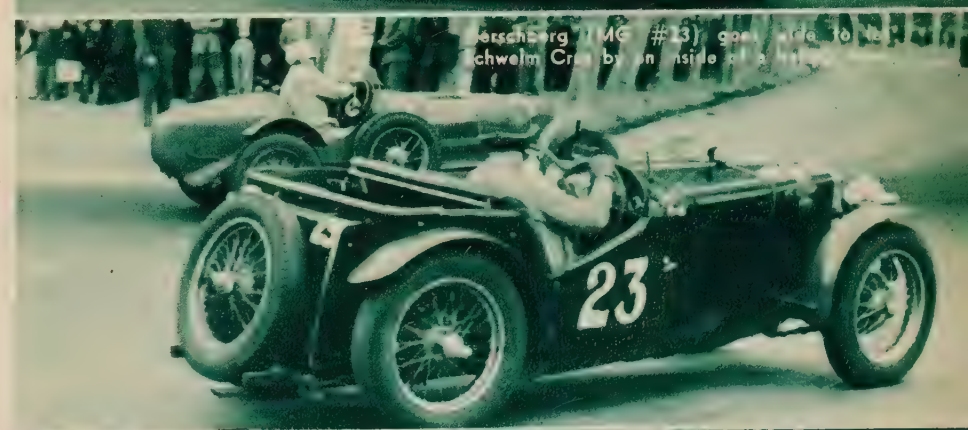
Overall point standings were as follows:

1st:	Adolfo Schwelm Cruz	(Alfa Romeo)	270 pts.
2nd:	Emilio Soulas	(BMW)	140 pts.
3rd:	Carlos Lostalo	(Maserati)	120 pts.
4th:	Carlos Perez de Villa	(Alfa Romeo)	100 pts.
5th:	Jorge Camano	(Jaguar)	65 pts.
6th:	Jose Millet	(Jaguar)	
7th:	Lucio Bollaert	(Jaguar)	
8th:	Jose Collazo	(Healey, blown)	
9th:	Ernesto Tornquist	(Cisitalia)	
10th:	Cesar Tesoriero	(Cisitalia)	

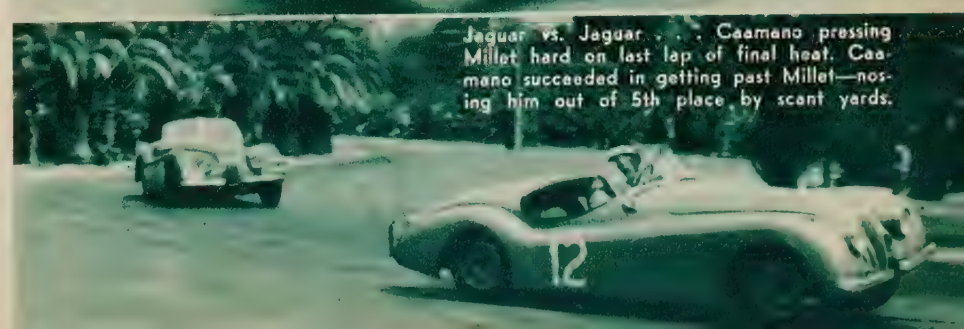


Adolf Schwelm Cruz (2.3 Alfa), the eventual winner, chasing Soulas (BMW) in 3rd heat.

Ernesto Tornquist (competition-bodied Cisitalia)—winner of the "up to 1,500 cc" class.



Horschberg (MG #23) goes wide to avoid Schwelm Cruz by an inside [illegible]



Jaguar vs. Jaguar . . . Caamano pressing Millet hard on last lap of final heat. Caamano succeeded in getting past Millet—nosing him out of 5th place by scant yards.

NOTES AND COMMENTS . . .

Race was a perfect debut for sports cars in a region where they were practically unknown . . . public gave them a most favorable reception. Schwelm's 2.3 Monza Alfa Romeo was obviously the fastest in the field, giving him an easy win . . . his most serious rival was de Villa's jinxed 2.9 Alfa. Lostalo, pre-race favorite, has been unable to get all the bugs out of his 1947 2-litre Modena Maserati—one of the sweetest looking jobs ever seen here . . . it had to spend all Saturday afternoon in the workships while others were qualifying. Most remarkable effort of the race was Soulas' veteran BMW, winner of Argentina's first serious sports car race back in 1948. The BMW even had the courage to seriously challenge the large Alfa for top honors in the last heat. Most cars would have been dubious starters but for the magnificent cooperation of the local mechanics who hovered over cars like mother hens. This writer will vouch for the truth of the local slogan ". . . the Land of Sunshine and Good Wine" having generously sampled the former during the races and the latter at the Victory dinner . . . Viva! Mendoza City and Argentina!

DRIVING

KELLY

BARLOW

McAFEE

There is no such thing as an absolute driving method. Some of the greatest drivers of all time have maintained winning averages with completely unorthodox techniques—but they have won despite their idiosyncrasies, not because of them.

Amateur and beginning drivers will do well to observe the methods and styles of successful drivers—analyzing and polishing their own habits . . . seeking for perfection.

A word here about driving position may well be of primary importance. And by this is meant angle and adjustment of seat, distance of steering wheel from the driver, position of the driver in relation to the foot pedals, elbow room and general comfort.

The cockpit of a sports car is the place where you may spend two to four (or more) grueling hours during a race. The more comfortable and secure you feel, the more stamina you will have for the closing laps when stamina counts.

Grand Prix drivers often spend endless hours worrying and fussing over these details, sometimes changing and rechanging them at the last minute. Grand Prix cars are often tailored to fit an individual driver's wishes, and European crew managers insist that the driver be happy and satisfied in his requirements.

Sitting too near the foot pedals causes unnecessary cramping of the thigh and calf muscles, while a position too distant from the brakes—for example—can throw a driver's timing off as he reaches for the pedal on each corner.

In an exceptionally light-steering car, the driver may sit well back from the wheel if he chooses—a position favored by many Europeans. With the arms nearly straight, less elbow room is needed. Americans seem to favor a more forward position and, of course, the heavier the steering, the more the driver needs leverage from his shoulders and arms . . . leverage which is only obtainable when seated relatively close to the steering wheel.

A glance at the accompanying photographs reveals some interesting habits and techniques of various drivers.

For example, drivers, almost without exception will space their hands according to the number of spokes on the wheel. On a three-spoke wheel, with the spokes in the form of a Y, the hands usually assume a 10 o'clock and 2 o'clock position. While four-spoke-wheel drivers generally find their hands at 9 and 3.

In these discussions, using the clock for easy position reference, the reader is reminded that the clock turns *with* the steering wheel in all cases. Thus it will be noted that Roger Barlow is holding an 8

TECHNIQUES

HILL

o'clock, 2 o'clock version.

Barlow, with his four spoke wheel, usually drives 9 o'clock, 3 o'clock in the straights. When going thru corners he keeps his hands in the same position on the wheel, rarely changing or sliding them from one place to another.

Don Parkinson starts his left turn at a 9-3 position, keeping his right hand on 3 o'clock, while he allows the wheel to slide thru his left hand, which goes no farther than the middle of his lap, or 1 o'clock.

Bill David uses a less exaggerated version of the same method—keeping his right hand barely to 2 o'clock and letting the wheel slide thru his left hand which is held a little higher than Parkinson's: 12 o'clock.

Marshall Lewis, seen in a right hand turn, maintains a constant 10 o'clock - 2 o'clock hold on the wheel for both straights and turns . . . . in much the same fashion as Barlow, tho the position is higher.

The two action shots of Phil Hill well illustrate the effect of steering on seating position. The exceptionally low steering ratio of the Alfa-Romeo permits a close-into-the-wheel position, which would be faulty in the (white) Jaguar.

Jack McAfee, driving the Jaguar thru a left curve, has made a full half-turn with his right hand remaining on 3 o'clock, but during the split seconds it takes for his left hand to follow clear under and around to the right side, that hand is useless. Using this unorthodox trick, however, does not prevent McAfee from ranking as one of the top Western drivers.

The car makes a great difference in the driver's technique. McAfee, accustomed to driving Edgar's light, fast-handling MG, is not completely at home in the Jaguar. Hill in the 15-year old Alfa indicates, by his super-intense attitude, the amount of drive necessary to keep up with the more modern cars. The difference will be noticed in his calm deliberate handling of the aluminum bodied, modified Hornburg Jaguar.

Positions of the driver's back and head tell a story to the discerning. Barlow seems relatively comfortable, with his back straight and his head erect in relation to his back. David leans far out of the MG with both back and head, while Kelly in the Cooper sits with his shoulders stooped and his head cocked to one side.

Lewis sits quite erect with his head alert and forward, while Parkinson leans his body slightly, but turns his head and tilts it outward.

Hill shows a tendancy to move his head upward and to the rear while shifting down and braking in the Jaguar—a perfectly sound practice, consistent with good driving.

HILL

DAVID

PARKINSON

. . . Jaguar corners

PALM SPRINGS ROAD RACE

. . . First time out.

. . . Parkinson wins

Bill David (MG #78) and Al Gunn (MG #79) go thru fast wide bend side-by-side.

RENO ROAD RACE

Bill Breeze (#4 Hornburg Jaguar) zips into hay-baled turn. Large rocks in foreground badly damaged several cars which spun-out.

Roger Barlow rapidly rounds Virginia Lake . . . ducks were unperturbed.

Fangio offers his Championship Trophy to Ign. Alessio, General Manager of Alfa Romeo.

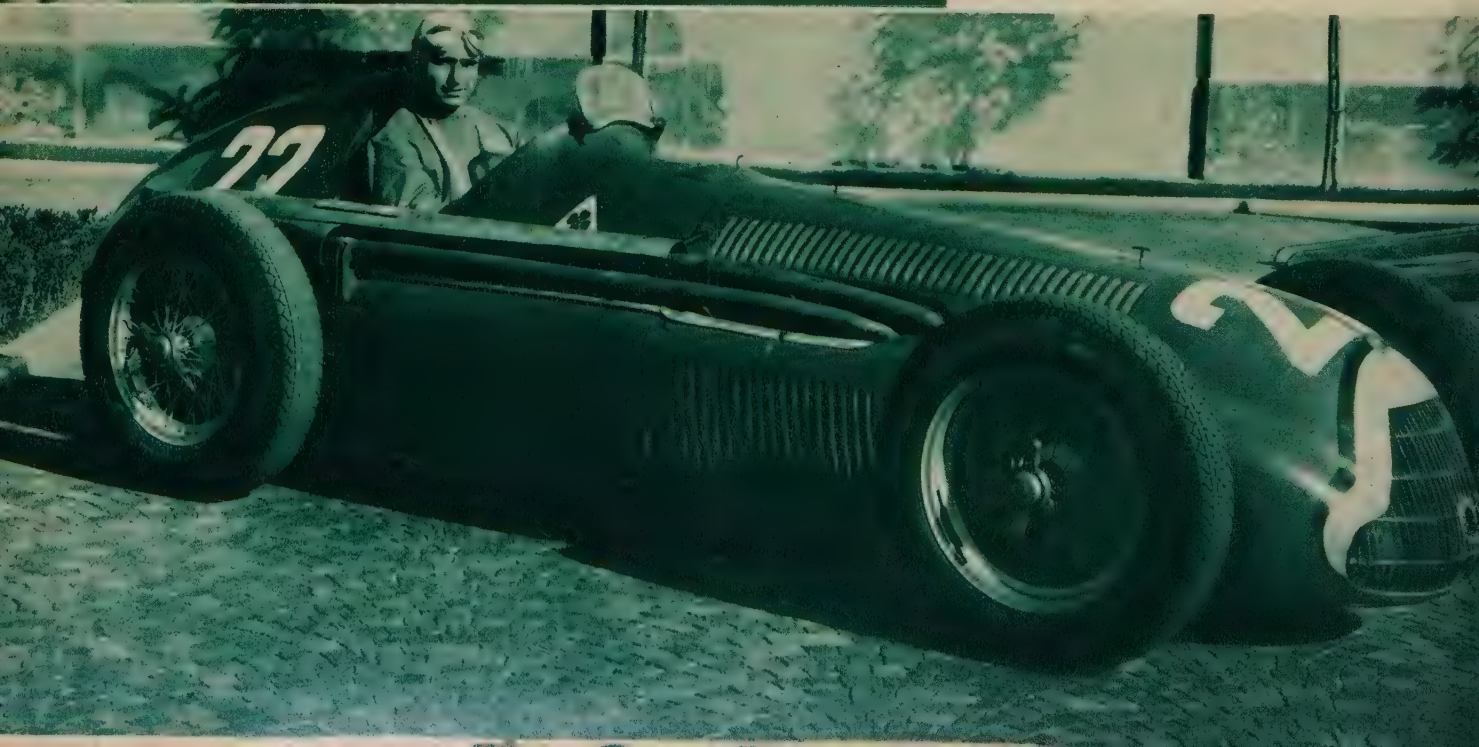
WORLD CHAMPION

Juan Manuel Fangio of the Argentine, by winning the Grand Prix of Spain (Barcelona, Sunday, October 28) became the 1951 Grand Prix Champion of the World.

Final point standings were as follows: Fangio (Alfa Romeo) 31; Ascari (Italy, Ferrari) 25 points; Gonzales (Argentina, Ferrari) 24 points; Farina (Italy, Alfa Romeo) 19 points; Villoresi (Italy, Ferrari) 15 points; Taruffi (Italy, Ferrari) 10 points.

Contenders for the crown are awarded points thus: 1st place, 8 points; 2nd place, 6 points; 3rd place, 4 points; 4th place, 3 points; and 5th place, 2 points. If the driver who makes the fastest lap of the day is among the first five places in the race, he is awarded one point extra toward the championship.

There are seven Grand Prix Races in Europe which count toward the total point standings for the championship: Berne

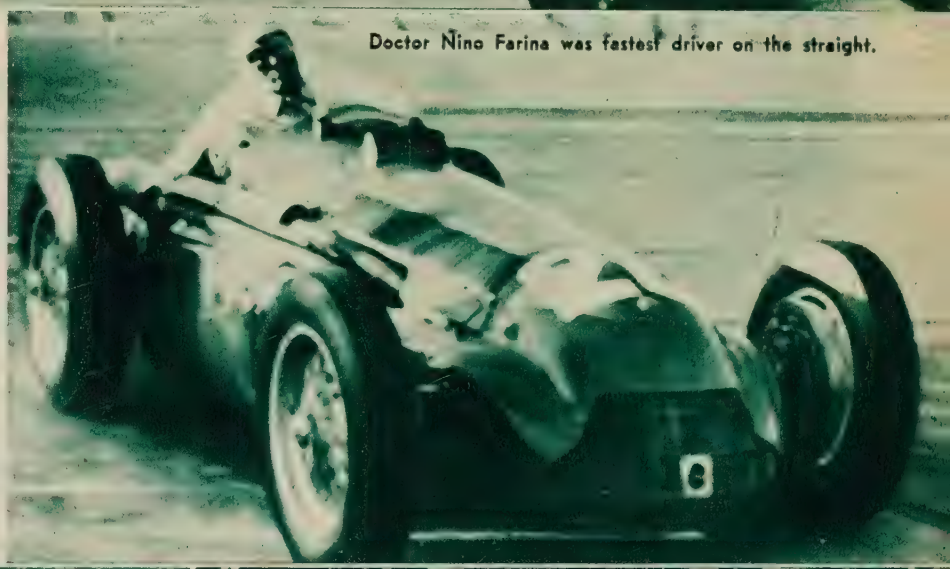


(Swiss G.P.); Spa (Belgian G.P.); Rheims (French G.P. and Grand Prix of Europe for 1951—each year one of the seven is chosen as the Grand Prix of Europe); Silverstone (British G.P.); Nurburgring (German G.P.); Monza (Italian G.P.); and Barcelona (Spanish G.P.).

Indianapolis is also one of the Grand Prix qualification courses; however, it is rarely considered in the European press because American drivers rarely drive in Europe, and European drivers rarely cross the Atlantic to compete in America's '500.'

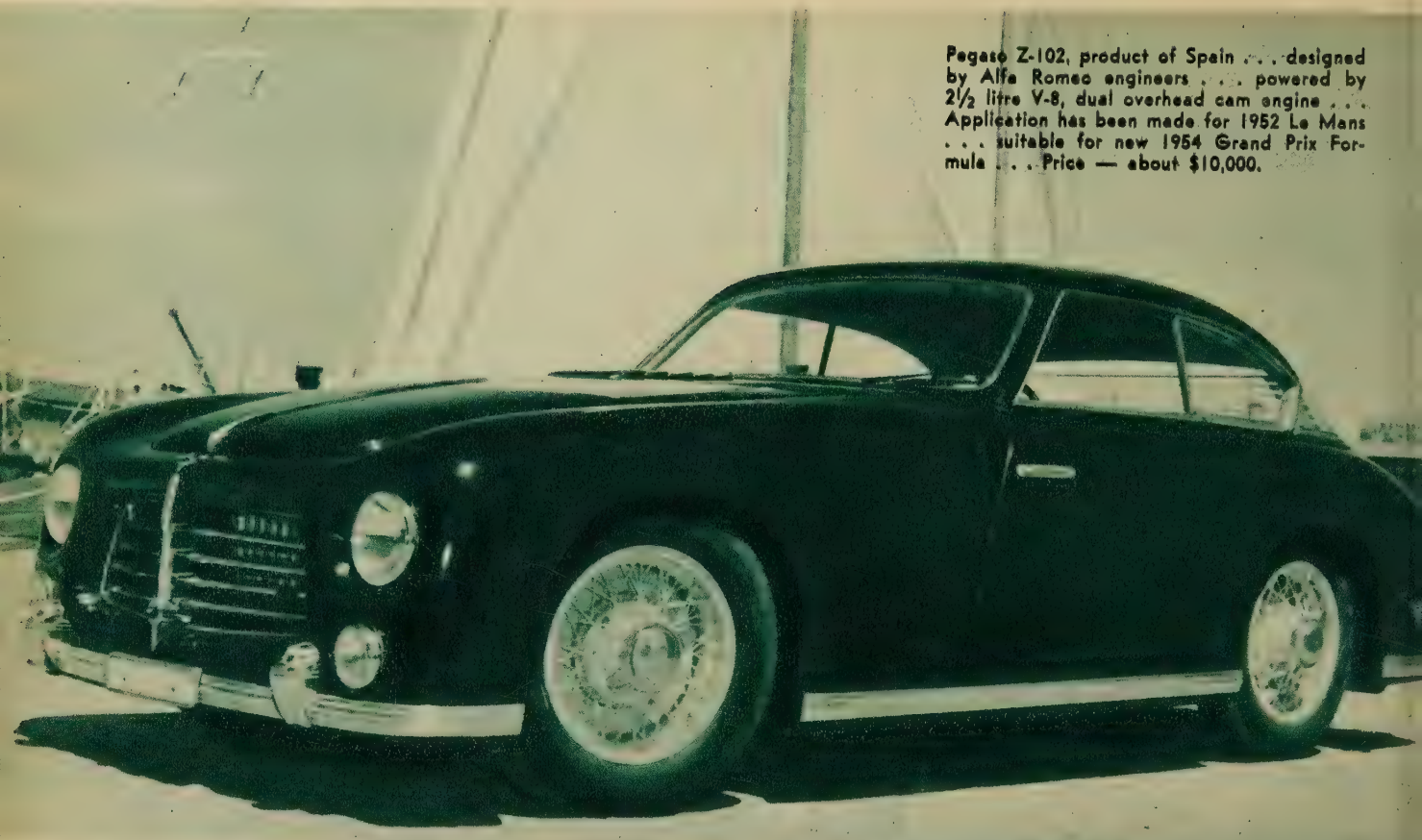
To nose out Ascari for the title, Fangio racked up a win at Berne, and a fastest lap; 3rd place, and fastest lap at Rheims; 2nd at Silverstone; 2nd place and fastest lap at Nurburgring; and a 1st at Barcelona.

His brilliant driving of the hard pressed Alfa Romeos this year make him a genuine World Champion.



Doctor Nino Farina was fastest driver on the straight.

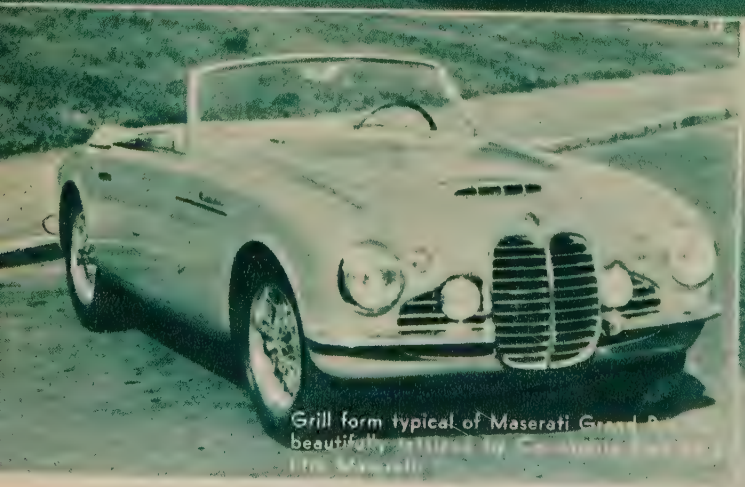
Ing. Satta of Alfa congratulates Fangio.



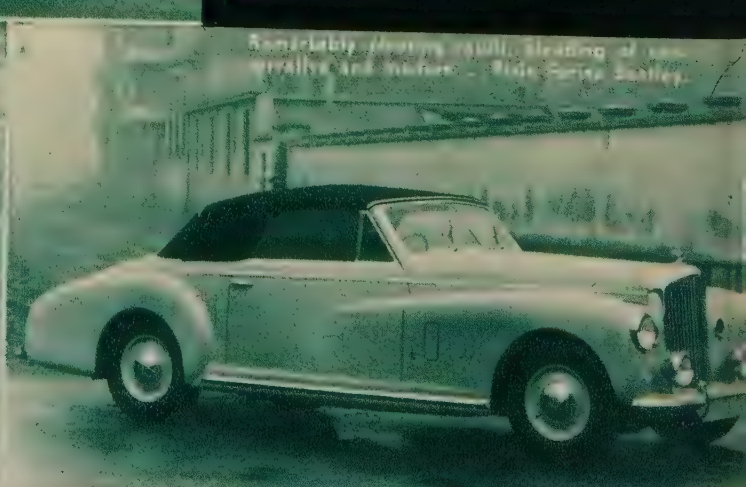
Pegaso Z-102, product of Spain . . . designed by Alfa Romeo engineers . . . powered by 2½ litre V-8, dual overhead cam engine . . . Application has been made for 1952 Le Mans . . . suitable for new 1954 Grand Prix Formula . . . Price — about $10,000.

Remarkble V-6 Lancia Aurelia Chassis—used by Carrozzeria Ghia for their lithe four-door berlina (sedan)

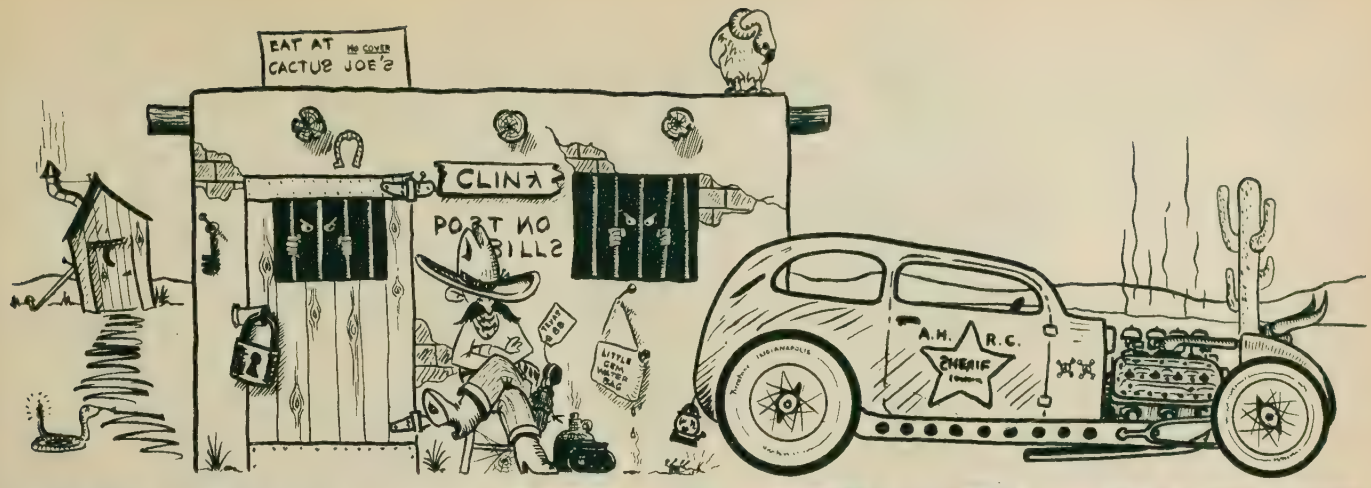
STYLING



Grill form typical of Maserati Grand P... beautifully ...



Remarkably ... results. Blending of ... curvature and surface ... Ride Series Studies.



LOST BOY . . .

When Roger Barlow and Louis van Dyke (International Motors, Los Angeles) became the world's first Cunningham dealers and arranged to take delivery on three Cunningham Sports Cars* at the West Palm Beach factory, it was decided that van Dyke would make the trip and drive one of the cars back to California, Ralph Wilderman of International going along as co-driver. John Bentley (*Autocar* and *Trend*) was chosen to drive another of the Cunninghams, along with E. Poorman of New York.

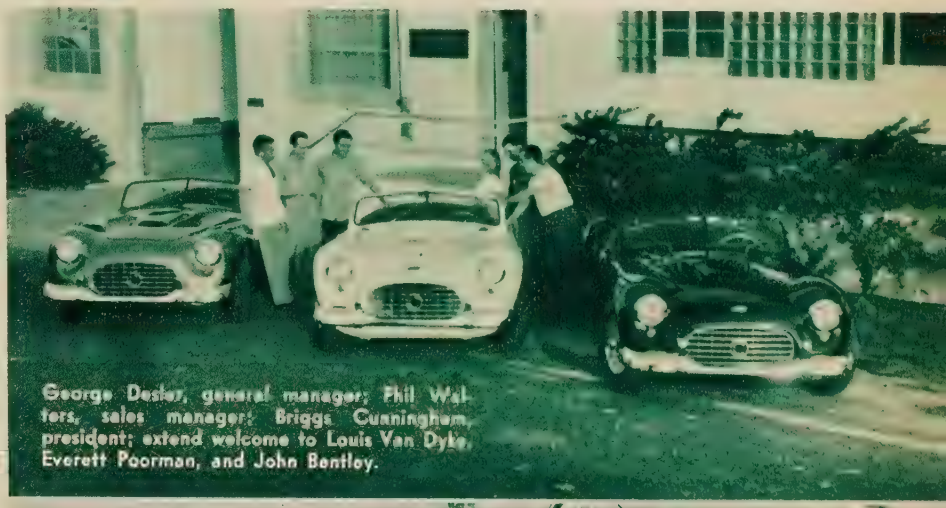
Road and Track was invited to send a representative to handle the third car. Chesebrough was assigned and this is the message we received from Texas during the return trip.

Cooney, Texas
Nov. 29, 1951

Dear Mr. Billingsley,

It was hard for me to explain what happened over long distance phone last night. In the first place, it was one of those hand-crank jobs on the courtroom wall, and in the second place a nine-foot Texas Ranger was breathnig down my neck. I would have told you more of my side of the story (I was *completely* innocent!) but I didn't want to get Officer Clark (spelled without an E) any madder than he was already . . . . or the judge either.

I'll give you all the details on the cars, like you wanted, so you can go to press, and then as soon as the bail money gets here, we can start reasoning with the judge. (And

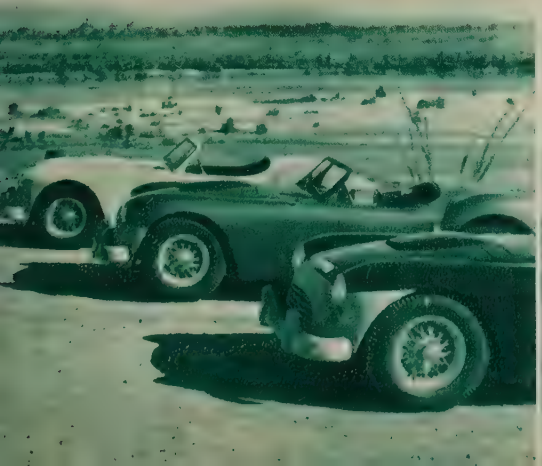


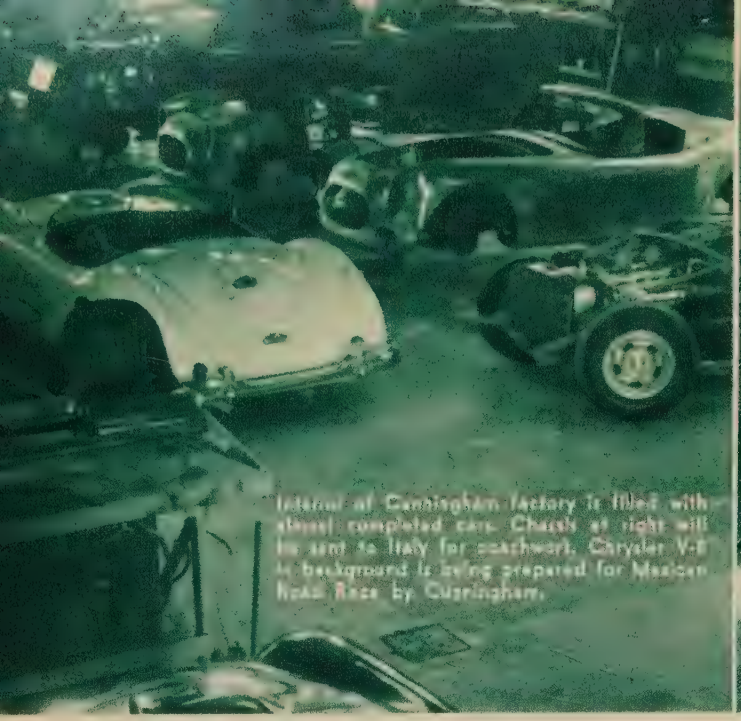
George Desler, general manager; Phil Walters, sales manager; Briggs Cunningham, president; extend welcome to Louis Van Dyke, Everett Poorman, and John Bentley.

Refueling with Mobilgas at Van Horn, Texas.

Van Dyke, Poorman, Wilderman, Bentley . . . in the Big Bend territory of western Texas.

Cunninghams three . . . on Arizona soil . . . Colorado River . . . then California!





Interior of Cunningham factory is filled with almost completed cars. Chassis at right will be sent to Italy for coachwork. Chrysler V-8 in background is being prepared for Mexican Road Race by Cunningham.

Skilled patternmaker prepares precision jig for Cunningham steering wheel.

by the way, I hope you wired right back. The chow here is something horrible.)

It's hard to tell how fast we were going. These Cunninghams have only a tach on the dash, and then there's a chart next to that. You're supposed to figure out from the chart how many mph you're doing.

I saw the cop pass and then turn around and follow us. I backed off to about an even sixty and started blinking my lights like mad at van Dyke and Bentley up ahead, but I guess they didn't get the point. Anyway, John Law breezed by me like I was standing still, and when I rolled into Cooney a few minutes later, there were the two other Cunninghams, alongside the road. Officer Clark had his pencil in this big ham of his and he was writing like his life depended on it . . . with his size 13½ boot planted on van Dyke's door-sill. I could see van Dyke wasn't too happy about that so I got into the conversation to see if I couldn't help out. The first thing I knew I was giving my name and address along with the other boys.

I feel terrible about getting held up like this. The cars were running swell and we would have been in L. A. by Wednesday, easy . . . *if*.

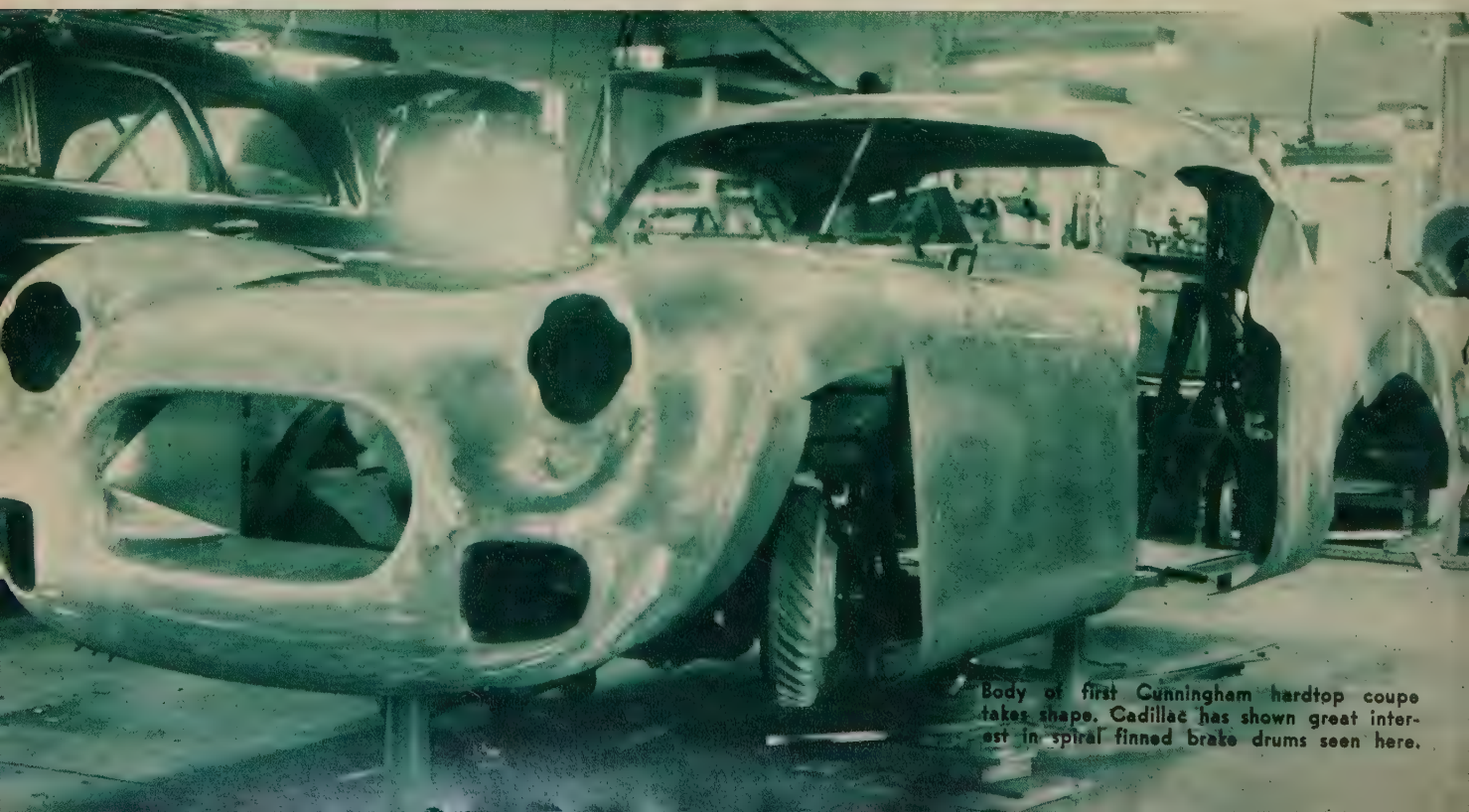
When we got to Florida, Briggs Cunningham turned out to be a wonderful guy, just like you said, and he gave us the visiting fireman routine. We saw everything at the Cunningham plant, and believe me it was a dream come true. As you can see by the photos, I was given a chance to get some good shots of the Cunningham chassis and the interior of the plant. It just goes to show what you can do if you spare no expense. Those guys don't miss a thing. Everybody works real quiet and everybody has his own job; like body work, upholstery and so on. You know Briggs' idea is to have his cars the safest and the fastest on the road, and you can sure tell that everybody in the plant feels the same way.

The cars weren't quite finished when we got to West Palm Beach, but Briggs got the boys on the ball and so we didn't have long to wait. We left town Friday and a whole bunch of MGs went along as far as the outskirts of town.

And brother was that torture! The engines were brand-new so we had to stay under fifty for the first five hundred miles. Maybe it was just as well, because your first impression—when you shift into high in the Cunninghams—is "how am I going to handle all this horsepower?" It's pretty hard to believe. You've *never* driven anything like it in your life.

Pretty soon Wilderman got hungry, as usual, so we decided to gas up while we were stopped. The guy in the gas station nearly rolled his eyeballs out on the ground when his first pump went empty . . . and when the *second* pump ran out he got down and looked under the cars to see where the gas was going. Of course van Dyke didn't help any by saying over and over "that should about do it . . . that should about

(Continued on page 34)



Body of first Cunningham hardtop coupe takes shape. Cadillac has shown great interest in spiral finned brake drums seen here.

Steering Phenomena . . .
Front Wheel Torque Constraint

To say that nothing is ever completely good is axiomatic in a world where perfection is agreed not to exist (tho to the popular mind, in the Atomic Age it must only be just round the corner!). Since, however, we cannot, like the Lord Chancellor in "Iolanthe," deliver ourselves of a song consisting of proverbs and adages alone, the reason for producing this axiom must be given. Front wheel brakes are now generally admitted to be *A Good Thing*, but their coming implied sacrifices of comfort, roadholding and steering, at least so long as the front axle formed part of the link between road wheel and occupants. Comfort and roadholding fell victims to the stiffening of the front springs, necessitated by the "tramp" tendency of the front axle (a subject already discussed), and by the brake torque. The steering was affected by the influence of brake torque in varying the caster angle and by the results of "out-of-center-point," another of the subjects discussed earlier. The Hotchkiss-drive arrangement is one of the many compromises which have served the rear axle well over a number of years, but the same principle applied to the front axle is a compromise which is far less satisfactory, chiefly because the front axle is much more sensitive to partial rotation about a horizontal axis transverse to the car center line than is the rear axle (which doesn't know what caster angle is!). For a given brake torque on the front axle, caster angle changes directly as the static deflection of the springs and inversely as the square of the length of those springs, where torque control depends entirely on semi-elliptics, and for a static deflection of 1" and springs 36" long, caster angle may change by more than 3° during heavy braking. Therefore, the designer is faced with the problem of either allowing an over-generous caster for non-braking conditions in order to maintain adequate caster when braking, or of fixing the design to suit normal running and lose the caster effect during violent braking or even to be subjected to an anti-caster effect which, once experienced, is never forgotten!

Continuing for the moment to consider the front axle, caster angle variations due to braking may be minimized either by a substantially horizontal torque arm (similar to the torque tube employed on the rear axle and commonly found on front axles having a transverse spring), or by a substantially vertical torque arm, coupled to the frame by a link of suitable proportions and length, and usually found in conjunction with either quarter- or half-elliptic springs which provide the other link of the parallelogram. The first-mentioned type, the horizontal torque arm, reduces caster variations due to braking but introduces others due to up and down wheel movements.

One of the incidental but nevertheless interesting effects of the partial rotation of the front axle about an axis across the car is that, if a fore and aft drag link is employed, this rotation of the axle will cause steering to left or right unless the drag link is at the level of the axis about which rotation occurs.

Every form of independent front suspension embodies means which considerably reduce caster angle variations under the influence of brake torque and the results are considerably better than those experienced with the "Hotchkiss drive" front axle arrangement.

Whichever way we look at it, large variations of caster angle as a result of brake torque are *A Bad Thing*, and as much as is reasonably (or economically) possible should be done to prevent them.

Two aspects of steering should be apparent from the previous articles which have appeared on this page during the last year: first, that good steering qualities in a car demand that the layout of the whole car shall be considered with this aim in view, and secondly (and resulting from this) that the designer must have a good idea of what he wants in the way of steering qualities before he starts to design the car, and must know what to aim for in that design to obtain those qualities. The first of these points has been stressed sufficiently already: the second may with advantage be developed further.

Suppose we presume to suggest to the designer what he should aim for? Perhaps the first requirement is that the car shall go straight down a straight road, and this is by no means as simple as it sounds, since a straight road may easily have bumps, varying cambers and (by arrangement with the Clerk of the Weather) may be subjected to the disturbing influence of varying side winds, apart from any phenomena contributed by the car itself. The reader will be familiar with the idea of under- and over-steer on a corner, when the car is heeled over, but a straight path down a straight road demands an under-steering tendency *before* the car begins to roll, so that the car will tend to straighten itself after being acted on by any of the influences which cause deviation or "yaw," *before* that deviation has become so pronounced as to cause roll. It also calls for a layout of the car suspension and steering linkage such that vertical road wheel disturbances are not converted into steering disturbances. Both these requirements limit the methods adopted to obtain the desired degree of under-steer when the car is rolled, e.g., "roll steer" as a corrective to improper weight distribution or incorrect balance of weight transference front and rear when cornering will not produce the desired results when the car is still "unrolled." A full development of this subject would be too lengthy for the space available here. Let us, therefore, proceed with our list of requirements: in addition to the maintenance of a straight course on a straight road, we must endeavour to obtain the desired degree of under-steer on corners, adequate warning of the imminence of a skid when cornering and maintenance of control when skidding, absence of any type of wobble, of road "fight" or "joggles," with consistent and therefore predictable behaviour in all circumstances. No undue effort must be required on the part of the driver; he should receive the aid of adequate "pay-back" or self-centering effect, and, in fact, every factor which will allow him to be mentally and physically comfortable, possessed of complete confidence and the sensation that, altho the vehicle is responsive and helpful, he himself will always be master of whatever situation is likely to arise.

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LOST BOY . . .

(Continued from Salon Section)

do it."

The three Cunninghams hold 150 gallons, all-told, and have three fuel tanks apiece—one in each front fender and one aft of the seat for reserve. When you run one fender tank dry, you turn a switch on the dash and that kicks you over to the other tank. If *that* runs out you switch to the reserve tank and the automatic electric fuel pump goes on.

What topped the whole gas station deal off was when Louis whipped out his credit card. I thought the service station attendant was going to break down and cry. Imagine taking practically all this guy's gas and then asking him to charge it!

Incidentally, Briggs told us that all these fuel tanks came in handy at the Le Mans 24 Hour Race in France—fewer pit stops.

Our first big stop was Tallahassee, but before we got there we got a chance to try out the tops. One minute it was dry as a bone and the next minute we were all drenched by a quick Florida rainstorm. We got the tops up in a few minutes and the cars ran fine in the wet. They seem to sit down on the road very securely. The only trouble was the racing brakes. The front backing-plates are cut away for cooling and when the rain starts the front wheel brakes are useless. We got along alright on the rear brakes, but naturally you don't have the braking power with only two wheels stopping.

During our Tallahassee stop we loaded up with sweat shirts, hunter's hats, and heavy jackets. Don't let anybody tell you the Florida nights can't be cold.

We caused a mild stir on Canal Street in New Orleans with the three Cunninghams and had some of that terrific French food before heading out for Texas. By the way, . . . (censored) . . .

On the open road these cars are unbelievable. Louis van Dyke stayed in front where he could keep an eye on us. The next time you send me on an assignment like this I hope the cars are well broken-in. Man, that was torture holding those big Chrysler engines down! I understand these hopped up V-8s will do a genuine 150 mph without any trouble at all.

Some clobber-head in a modified Cadillac tried to give us a "hard hour" in the backwoods of Louisiana. He'd pass us in the straights because we were holding below 70 mph, but he had to back off on the turns and we didn't. It was like having your hands tied behind you to let him pass. I can just hear him telling all the boys at the office how he blew off three Cunninghams.

When we arrived in Houston, a big crowd of Sports Car Club of America members were waiting to look at the cars. After we told them the details of the Cunninghams and about the trip, they held their regular business meeting right there on the lawn.

We lubed and checked the cars from stem to stern before leaving Houston and then made the trip to San Antonio at night . . . which makes me think of the lights. They're standard seal-beams and set at legal height from the ground. The instrument panel lights are controlled for brightness by a rheostat. A separate rheostat controls the light for the top three instruments: Water temperature, oil temperature and tachometer. Additional lights are mounted under the hood and in the rear trunk.

By this time we were all getting accustomed to the cars and felt at home in them . . . except that they are so expensive it gives you a mental uneasiness. $10,000 is a lot of valuable metal to whip into a corner with.

Speaking of corners, it took us a while to get used to the Cunningham's oversteer. At first, I found myself setting the wheels for a turn and then I had to correct, or I'd turn too sharp. Wilderman tipped me off that you go into a corner a little flatter than you think you should and the car will come around just right. I tried it and sure enough it worked.

Briggs Cunningham told me that he will definitely enter the cars at Le Mans next year and he showed us the model he is getting ready. We also saw the Chrysler coupe he is entering in the Mexican Road Race and the plans for a hard-top Cunningham coupe which is a real beauty.

The Cunninghams we drove were sure roomy. We took the single passenger seat out and all five of us piled in to go to dinner in Houston. Besides the driver, there were four of us in the car . . . all lined up around the cockpit wall like Camp-Fire Girls. And there was still room for more.

Now look, Mr. Billingsley, I hope you don't blame me for this whole mess. I've put the film in another envelope and sent it Air Mail. Please call my wife and tell her I am all right and not to worry. I should be in Los Angeles Friday night if the money gets here this morning.

Your lost photographer,
Jerry Chesebrough

P.S. Louis wants you to phone Roger Barlow and explain. Nobody around here seems to want us to use the phone anymore. And Wilderman says never mind his wife. She probably won't miss him anyway.

*See **Road and Track**, June for complete Cunningham specifications and **Road and Track** August and September for the performance of Cunninghams at Le Mans.

THE JAGUAR XK 120 DASH "C"

We see by the news in the mags and the rags
That the latest and greatest of the postwar Jags
Is the modification bemonikered "C"
Of the Jaguar XK One TwenTEE.

Though not as yet in these parts to be seen,
Her photo's displayed like femme of fair mien.
In Vogue, Road and Track, M. I. and M. T.
Her functional form makes the readers say,
"Gee, that's for me!
That Jaguar XK 120 dash C!"

She's low and she's short, and she corners so nice;
Leaves the others behind when topping a rise.
A hundred and forty and a little more
Before you can really yell "Full bore!"
For under the hood you'll find a full stable
Of one-ninety horses all willing and able.
For discs made of steel she carries a grudge,
Her wheels are of wire manufactured by Rudge.

The Alfa, Ferrari, and Cunningham too
Are all very fast and built for the few;
But this little bomb is a special edition
Sold only to those who withstand competition.

Midget and magnate, artist and writer,
Butcher and baker, or just plain blighter;
A polyglot lot, as you can see,
But on one thing they all agree—
They want that car from Merry E,
That Jaguar XK 120 dash C!

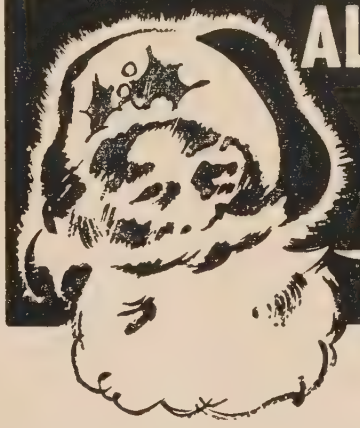
But—
A point to remember, a fact to engender,
Her pricetag, it calls for much legal tender.
Six thousand fish for this delectable dish,
A samoleon less would deeply offend her.

Atlantic, Pacific, whichever the seaboard,
The refrain is the same, as if from a keyboard;
From near and afar it's just "Love that car!"
That XK 120 dash C Jaguar.

And it's nice to contemplate,
Is this then the ultimate?
Let's consider some future date,
Say Nineteen hundred and fifty-eight;
When Reginald, Algernon, Percy, Geoff
From some Anglian do about to be off,
Shout, "Pip, pip, cheerio and all that, you know,
For here we go
In our Jaguar XK 120 dash 'O'!"

F. Marcosson

Play Santa to Yourself ALL WINTER LONG



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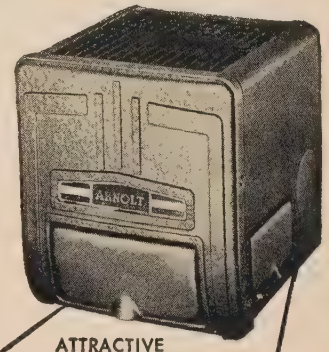

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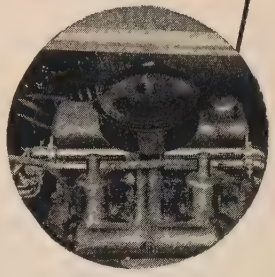

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TECHINCAL CORRESPONDENCE

(Continued from page 9)

STUDEBAKER CRUISING SPEED

I noticed your discussion of cruising speed of the Dodge (Sept. '51 R & T) and I sat down to figure out the same thing on my '51 Studebaker.

Here are my calculations:
Stroke: 3.25 in. or 0.271 ft.
Piston Travel per Engine Rev. is 2 x 0.271 or 0.542 ft.
Piston Travel at 4000 rpm 4000 x 0.542 = 2170 ft/min.

Some more calculations:
Wheel revolutions per (7.10 tires) Mi.: 739
Standard Axle (Torque Converter): 3.54 (Direct drive)
Engine Rev. per Mi.: 2525

I measured the circumference of the tires under load and found it to be 7.42 ft. This gives a theoretical top speed (at 4000 rpm) of 95.2 mph.

My question is: What cruising speed does my Studebaker have? If we use the 2500 fpm limit, we exceed the rated peak rpm of the engine.

San Diego, California — N. C. Oxford

My slide rule checks all your figures on the Stude V-8, and I get 106 mph cruising speed. This is a state of affairs which means you can definitely cruise this car at any speed you choose without fear of "blowing up." Of course, around 95 is the honest top speed on a level road.

Re: wheel revs per mile, the figure 739 will decrease slightly with speed, but tires deflect a great deal more than most people realize, so it's no use trying to measure the circumference (Road and Track, June 1951).—Tech. Ed.

FUEL INJECTION

I would like your opinion about the Stuart Hilborn Fuel Injestor for my 1949 Hudson Super Six convertible. Seems to me that would solve a lot of the carburetor problems.

Vallejo, California — B. Hardin Corbin

The Hilborn fuel injection system is fine for racing cars where the throttle is wide open most of the time, but it is a long way from being a practical proposition for a passenger car. Hudson will shortly announce a dual manifold, and I suggest you use this.—Tech. Ed.

TERRIFIC KNOCK

I have a 1950 Plymouth completely stock except for an 8 to 1 compression head and a little hotter coil. I have a knock (not a ping) at 50 mph and up that is awful. I have always had a ping, but this knock is terrific. I have set the timing back and forth and use ethyl gas. I hope you can give me some solution. I know very little about things like this.

Yakima, Washington — Richard F. Hahn

About your problem, I can only guess, since I can't hear the knock.

Assuming the car is in good shape mechanically, it sounds like you may have detonation trouble. Try mixing some benzol in the gasoline —about 20% benzol, 80% the best premium gas you can find. If this reduces the knock, we are on the right trail. If this fails, tear the engine down and look for loose bearings or sticking valves.

It is also possible that your automatic advance mechanism in the distributor is not working since you imply timing adjustment seems to have no effect. It could also be that your special head is a lot more than 8 to 1, in which case, try a stock head and see if the knock stops. Another suggestion is to avoid any sharp edges on valves or anywhere inside the combustion chambers. Such places get red-hot and cause pre-ignition A final point is to separate each and every high tension wire as much as possible, because sometimes leaky wires too close together will produce an amazing "thump." —Tech. Ed.

32 ENGINE?

I have a 1932 Ford roadster . . . I would like to hop up the engine. Do you think I would have outstanding acceleration by leaving the '32 engine in the car or putting in a newer model block?

Kansas City, Kansas — O. J. Meng, Jr.

You can do quite a bit to the 1932 engine, but it is advisable to use at least a 1946 or later block, commonly referred to as the "59A". There are many reasons for this preference, including:

1. **larger diameter bearings (main and rods)**
2. **cast crank (harder surfaces)**
3. **24 stud heads (instead of 21)**
4. **large oversize bores possible**
5. **better cooling**
6. **better bearing materials**
7. **availability of stock parts**
8. **availability of special equipment.**

If at all possible, pick up an old engine and rebuild it as time and money permits.

Incidentally, the small forged bracket that bolts to the front of your '32 engine will work on the later engines (for a front motor mount) if you file off a little for fan belt clearance. See HOP UP magazine for further dope on roadsters.—Tech. Ed.

'32 FORD SUSPENSION

I'm one of the so-called 'hot-rod' boys. I drive (when it's running) a '32 Ford roadster. However, I am a member of the Calif. Sports Car Club. I am interested mainly in fair top speed and acceleration but mostly in handling. I fully agree that most 'hot-rods' or better 'roadsters' do not handle well. Some of them may, but mine does not. I'd like very much to see some articles on modifications to Ford (pre '49) suspension systems. I know what is wrong with the suspensions but I don't know how to help it. Maybe Mr. John Bond could help me out. I know the basic Ford system can be made to work because Mr. Allard has had very good luck with it and Bud Satcher hasn't done too badly with his ex-Indianapolis two-man car. We read in your magazine that this car understeers or that car oversteers, but why not an article telling why they do and how to correct it?

Venice, Calif. — Charles Becker

I think your question re suspensions is being answered by our current series of articles on the subject. I owned a '32 Ford roadster for three years and there's nothing especially wrong with the suspension or steering. It's just that transverse springs give more roll, the center of gravity is rather high, and there isn't enough weight on the rear wheels.—Tech. Ed.

DROPPED AXLE

In your article "Is A Hot Rod A Sports Car?" (Dec. '49 issue) you list the use of a dropped front axle as undesirable. Why?

Oklahoma City, Okla. — Thomas Maguire

Dropped axles are objectionable due to necessary hot-working which makes coarser the grain structure of the original heat-treated forging. The rework also requires stretching which reduces the original cross-section and strength. The section is "built-up" by welding to restore strength, and while I've never heard of a failure, I still don't like it. Other complications enter into the picture, such as ground clearance, altered steering geometry, etc.—Tech. Ed.

Gift suggestions!

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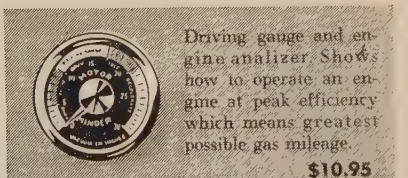

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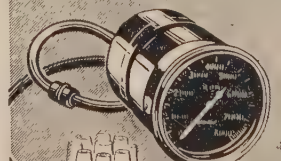

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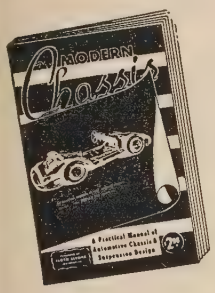

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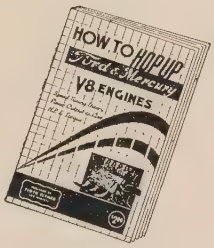

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(Continued from page 13)

started in New York and was run in a westerly direction to the coast, from whence the cars were transported by ship to Vladivostok, Russia. From this historic port city, they ran overland to Paris where the finish line was located. The Thomas defeated a Moto-Bloc, 2 De Dions, a Protos, a Zust, and a Sizaire-Naudin. Considering the year, this performance was nothing short of sensational, for most of the route consisted of country where roads were undreamed of, and there is no record of the Russians having "invented" the filling station at that time!

The Minerva, vintage 1924, is owned by 20th Century-Fox Films Corp., and was last used in their production "Love That Brute." Powered by a 6-cylinder sleeve-valve engine, the Minerva was noted more for its smooth riding qualities and longevity than for its speed. A Belgian product, the original price of this model was approximately $17,000, and several Minervas, both newer and older, still survive in the United States, more than one of these being used for picture work.

The older Mercedes Benz tourer is a 1928 Model S, whose 7-litre 180 hp engine packed enough wallop to enable this heavy sports car to travel well in excess of 100 mph. It was rented to Paramount by Joe Reindl of Hollywood for use in the early "Bulldog Drummond" series. The factory body was modified somewhat by Mr. Reindl and except for the characteristically stiff clutch action, was a joy to drive. In one year alone, this car worked in 13 pictures, which is without a doubt some sort of record.

A later and heavier (10,000 lbs.) Mercedes is the monstrous black and chrome Model 770-K Super 8 owned by Christopher Janus of Chicago, and rented by him to 20th Century-Fox for use in "The Desert Fox" starring James Mason as Marshal Rommel.

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The one-lunger with Lee Tracy aboard is a 1905 Reo used by M.G.M. some years ago for "Turn Back the Clock," and its engine reposed directly under Mr. Tracy's *derriére*. The hood housed the fuel and water tanks as well as the none too efficient radiator, but $650 was a reasonable enough tab to pay for anything that ran, and the 7½ hp engine gave creditable service in this little runabout. Jump-spark ignition, splash lubrication, and planetary transmission were all incorporated in the early Reos, and while long outmoded, this same car, owned now by Pacific Auto Rentals, can still give a good account of itself in traffic.

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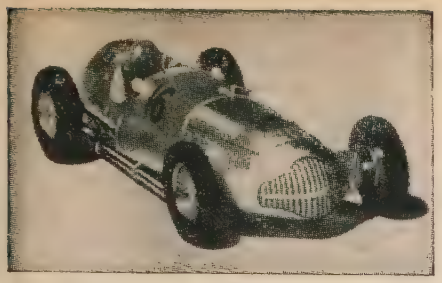

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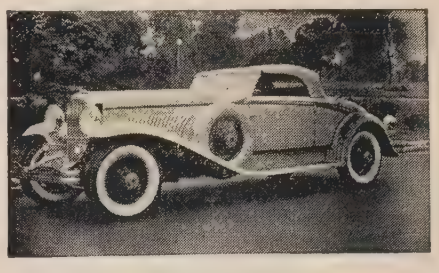

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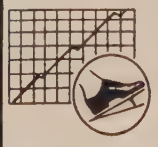
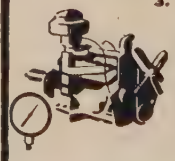


2. **PERFORMANCE** charts and suggestions are enclosed with every meter, enabling you to determine how many miles per gallon you are getting, and what adjustments to make to increase your mileage.



3. **YOU** can check your engine condition at all times, and if it is not operating efficiently, Mile-O-Meter will tell you how to correct the condition.

4. **SIMPLY** mount meter on windshield frame or on dashboard area to suit your convenience with the aid of mounting brackets that can be bent into practically any position.

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and finally he pulled the brakes enough so that the drivers could not use them excessively. It is this difference of viewpoint which marks the cause of Ferrari's defeat.

Considering what has been said about both teams, we see that, as a logical result, what should have been the most interesting race of the season was spoilt by the long succession of Ferrari pit stops—which blocked their success.

The Race

Ascari (Ferrari) led into the first curve, followed by Farina, Fangio and Bonetto (Alfa); Gonzalez (Ferrari), De Graffenried (Alfa); Villoresi and Taruffi (Ferrari). As we knew before, the Ferrari were faster in the first lap with their more efficient braking and acceleration system, but inferior in pure speed. It was too bad that the race results were known since the early laps because we expected a real hot battle between Fangio and Ascari as they struggled toward the World Championship. However, for their own satisfaction this race should have been won by one or the other with the cars in perfect operating condition—so that there would be no possibility of appeal.

Ferrari's tire tragedy started at the sixth lap, when Taruffi made his first pit stop. In the meanwhile, Fangio (Alfa) took the lead. Villoresi stopped his Ferrari in the 7th lap and Ascari did the same in the 9th, all these pit stops because of detachment of the tread.

The Alfa Romeo team (using the same Pirelli tires but larger diameter) was running so perfectly. From the very first moment, Fangio drove his Alfa so sure and calm, heading—by one minute—Ascari, his direct rival. The victory crowns the dream of this great Argentinian who, because of his good nature and modesty, counts a great number of friends, even in Italy.

Ascari being so far behind, Fangio logically slackened his speed—running 10 seconds slower than his fastest lap. The car . . . perfect in every detail . . . is the only car on the Alfa team rebuilt as new for this race—and given to Fangio, as he was the only member of the team eligible to win the championship.

So Alfa finished all four of her cars—1st, 3rd, 5th and 6th. Their greatest success, when we consider it, came in the middle of Ferrari's great series of victories.

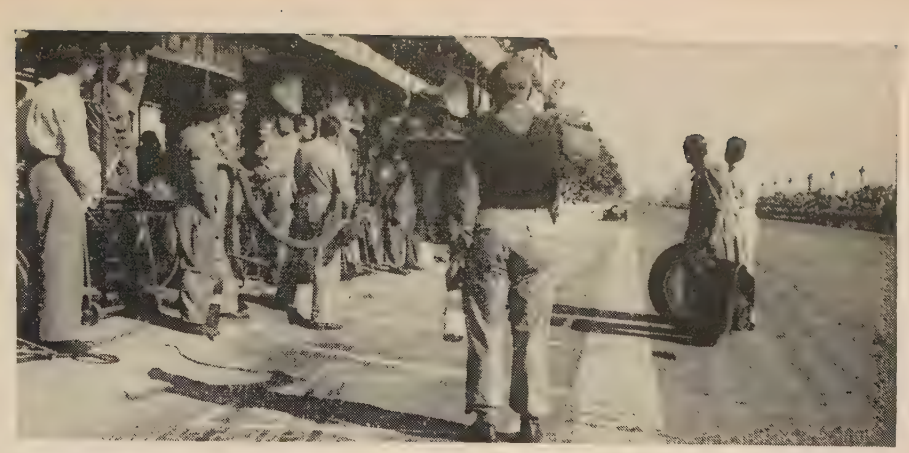
Ferrari suffered more than tire trouble when we see that Villoresi went out with clutch trouble and Taruffi with a broken half-axle—which again shows the weak point of Ferrari's transmission. Not only was Ascari forced to stop every nine laps for tires but his engine performed badly from the halfway mark. He lost all hope of victory, but he finished the race in the best possible position (4th). The only Ferrari in very good conditions of performance was Argentinian Gonzalez'—which suffered but one loss of the tread. Fangio felt quite safe even tho the man at his heels was his countryman—being so far ahead. Even so, Gonzalez placed second saving Ferrari's honor and completing the great Argentine success.

About Farina, 1950 Champion, there is not much to say, since he did not run at Germany and Italian G.P. and was therefore out of the championship classification. His car did not assist him at Barcelona, so the fact that he placed 3rd shows that he is still a champion.

Even tho Bonetto finished fifth he made the fastest flying mile of the day (175.5 mph) and drove a very regular race, even without glasses (forgotten during pit stop).

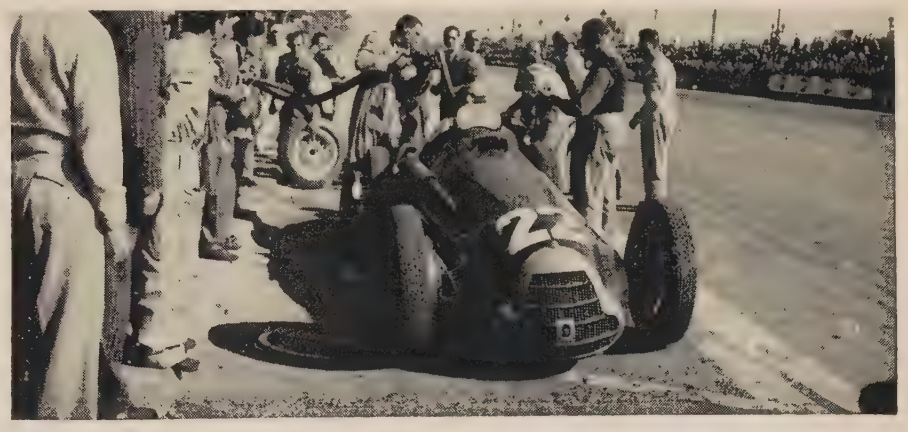
At the end of the 1951 season we have Alfa with the same level of efficiency as Ferrari, even tho the builders affirm that the amazing 293 hp per litre is the limit they

(Continued on next page)



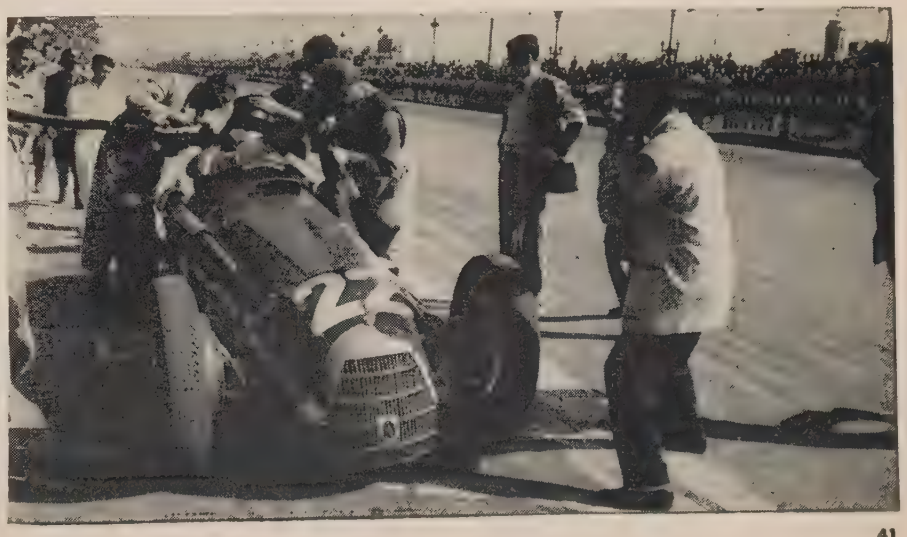
Fangio bores in for pit stop. Crew members wait with left rear tire and fuel splash guard.

Hose in attendant's hand will pump fuel at unbelievable rate of five gallons per second.



Crew manager hurriedly jots down Fangio's comments, then gives additional directions to crew.

Attendants will not move in unless their work is called for, move back the instant they finish.



BARCELONA GRAND PRIX

(Continued from page 41)

can go with the small 1500 cc engines. The young Ferrari with their 375/380 hp (compared to 440 hp Alfa) has much more room for development—and they are, at 1775 lbs, much lighter than the Alfa (1866). At present the two completely opposite cars have about the same weight/hp ratio.

In the last season the two cars showed their weakest points: Ferrari suffering in the transmission, clutch and suspension, so that at Barcelona they were unable to use their full power; and Alfa complaining of clutch troubles in Farina and Bonetto's cars at Barcelona. Even so, Alfa, because of Ferrari's troubles, did not have to use full power.

We note here, that at the start of the Barcelona race, each car was equal—each one marking three victories, putting their high-point men also equal in championship standing. Alfa won the Barcelona G.P. by 53 seconds—so the time between the two Houses is less than one minute after all seven of the Grand Prix races.

MEXICAN ROAD RACE

(Continued from page 7)

to be crazy in the road racing game . . . but it helps.

JERRY CHESEBROUGH'S STORY

I left Tijuana, Mexico (opposite San Diego, Calif.), Sunday night and flew to Mexico City. Bill Quinn was waiting to go to Tuxtla Gutierrez, Mexico (665 miles), for the start of the race. We took right off, drove all night, and finally reached Oaxaca (337 miles). At Oaxaca we were lucky enough to find good food. By this time Quinn had built up a prejudice against red eggs and little bugs in the drinking water—so I got six meals a day . . . his three and my three. He said that Tuxtla was about eight hours away (328 miles) but we were going to make it in six (so there would still be some light to take photographs before the actual start).

We were met by Bonetto, Volpini, Chinetti and Taruffi, who spent most of their time in the local garage. One of the Ferrari (the winner-to-be), had a bad water pump. Villoresi and Ascari were changing the spark plugs in their Ferrari, Volpini had the valve covers off the Lancia and was going thru the top end of the engine. It seemed like every car in Tuxtla was in the race. They were everywhere. There was no room in the whole town for people either, so E. Rickman of Motor Trend put us up. We finally found a Mexican Goodrich tire . . . for 281 pesos. At 8.6 pesos per dollar, it cost us $39. We found out later this Mexican tire was wonderful . . . almost pure rubber . . . and outlasted the American tires we bought later in Mexico City. Last year's drivers warned us that dysentery was prevalent . . . "don't drank any water, eat any tomatoes or green vegetables." This year, everybody brought pills . . . one a day and you could eat anything without getting sick. I loaded up on these pills and took them religiously.

Tuesday morning, for the start of the race, we were up early. Cars were all lined up for the start. Everyone in the small town of Tuxtla turned out to watch the start. Every Mexican Army rank was there—from a buck private on up to a general. The only crowd control was the cars themselves. When they came thru, the people moved back. As soon as the car went thru, the road filled up with people again. They seemed to have very little regard for their lives. The cars started one by one, a minute apart . . . the two Ferrari and the Lancias sounded wonderful at the starting line, their refined exhausts so different from the big, heavy note of the Chryslers and Cadillacs. After the last race car left, we were held ten minutes before being allowed to start for Oaxaca.

It seemed like about every 20 miles we'd see a car alongside the road . . . either wrecked or out of the race. Flat tires, engine trouble . . . others smashed beyond repair. In one accident, two Mexican drivers were killed . . . they drove straight off the cliff. Evidently a blown front tire. Approximately 10 miles from Oaxaca we passed a car being towed . . . it was the Lancia . . . with **Road and Track** painted on the side. Bonetto told us the head gasket had blown and the block was cracked. And he was one of the leaders at the time.

At Oaxaca we found the two Ferrari had six blowouts on the first leg. One of the tires threw its tread right off the cord. As the Italians didn't have any other tires with them, they put on standard, Mexican Goodrich passenger car tires, and finished the race on these. A lot of the cars were pretty shot at this point and crews reworked them overnight.

". . . we slid toward the edge of a sheer cliff—a 300-foot drop—all four wheels locked tight."

Volpini and I left there at evening (for Mexico City), driving Quinn's Ford and towing the Lancia Before long, the Ford developed a flat tire Wham, bam . . . Volpini had the trunk open, the jack out, the car up in the air and the wheel off and tire changed before I had a chance to do anything. Those Italians really have this tire-changing down pat.

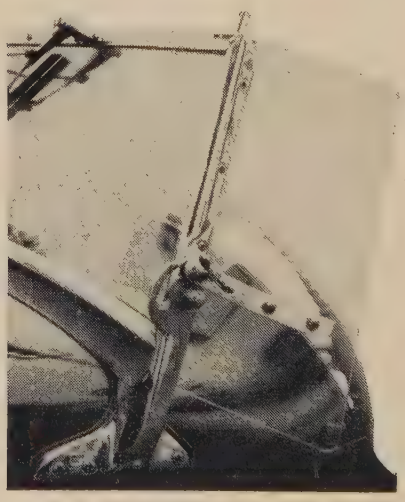
Bonetto could talk some English, but Volpini couldn't. All he could do was to make motions. He was like an Italian Harpo Marx.

The road between Oaxaca and Mexico City is very mountainous and after climbing for some time, we started going downhill. Bonetto signaled me to stop. Then he told me (in his polite Italian way) that we would untie his car and let it coast down the hill. We did this and the car coasted down quite a long grade and then we started going uphill, so I turned in front of the Lancia to tie on again. Over the next hill I stopped so we could untie it again. This went on a couple times more. Then Bonetto came up to the car and said that we wouldn't do it anymore—but he told me in too polite a way, and I didn't understand. So the next down grade, I stopped to untie again, and he got out of the Lancia and was anything but polite. He said in his broken English, "Look, friend, we have no joke. We no play no more. We keep 'em car to Mexico City." I couldn't help laughing . . . he and Volpini started to laugh too. From there on in the trip was pretty uneventful, but it took an awful long time to get to Mexico City.

When we arrived in Mexico City about 4:00 a.m., we took the Lancia to a garage and I went and woke up Brehaut. He wasn't too happy about that, but he gave me the pesos I needed. Then I drove back into the mountains—to take pictures I parked off the road and slept on the front seat. About one o'clock in the afternoon, the cars started coming by, so I got up and took some pictures . . . cars, trees, volcanoes, and what have you. The Ferrari were the first to come by and the remaining Lancia wasn't too far behind.

During the race, the roads are blocked by Mexican soldiers, and between Oaxaca and Mexico City, the road was lined with Mexican Army field telephones . . . perfect contact from point to point. After the follow-up car went by, I had made my way thru the crowd into Mexico City—a real chore. The Mexican people seemed to come from nowhere and they were all over the road, and as I said before, they have very little regard for their lives. After driving thru and around them for awhile, you develop the same disregard. The best thing is to just keep going and let them watch out for themselves . . . and they will.

At Mexico City, I contacted Billingsley (who had flown down by this time) and Quinn. We had a luxurious apartment suite at the Hotel Monte Cassino during our stay in Mexico City (two days). That night, many more cars were rebuilt for the next day's run to Durango (601 miles). The next morning we watched the cars take off. The Ferrari were the first to leave, a position they earned by coming in first the previous day. While in position for the start, a distressing lack of oil pressure was discovered in Walt Faulkner's car: Walt drove over the starting line with no pan on the engine, just to stay in the race. About a half a block from the starting line, the car came to a stop and the pit crew started working again. Unfortunately, Faulkner didn't finish the leg in the maximum time and so was disqualified. The following day, I drove all day long, finally arriving at Durango about two in the morning. I decided to keep on going as far as Parral (251 miles), which was to be a gas stop the next day. I finally found the road leading out of Durango. It was blocked



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by Mexican soldiers, but as soon as I told them I was "la prensa" they let me thru. Along the road I hit about six Mexican Army road blocks. All I would say was "la prensa" and they would say "Buenos noches" and I'd go thru. One of the last of these road blocks turned out to be seven drunk Mexicans . . . tequila. It was pitch black and I spent an hour out on the highway with them. But they just stood in front of the car and pointed to either side of the highway, meaning I had to get off . . . I couldn't go any further. The leader took two of his men and stationed them about 20 feet up the highway with their rifles pointed right at my windshield—in case I attempted to go any further. I tried to talk to the fellow the best I could. I got out my little Spanish booklet but I couldn't make him understand that I had to get to Parral. Finally, I was about ready to give up, when I asked if he would like some pesos. He smiled! So I gave him a 10 peso note. He took it in front of the headlights, looked at it and then started laughing. He staggered around and showed it to all his men . . . they laughed too! Then he came back and threw the note at me. Of course, out in the dark highway I was a little scared with these drunken soldiers. I asked, "How much pesos?" and he said, "Oh, mebbe five" (meaning five 10 peso notes). So I gave him 50 pesos and he still didn't know whether he would let us go or not. Then a young Mexican came up, laid his rifle muzzle against my chest and wanted two for himself. So I really blew my stack and told him I couldn't afford it. I think from the tone of my voice he could understand that I was really tee'd-off. He decided to reduce his price . . . to one ten peso note . . . which I gave him. At that point they let me go thru. It was a real hair-raising experience . . . like trying to get out of Russia. After a few more road blocks (which let me thru readily), I arrived at Parral. After sleeping for about an hour, the cars started to come up.

The Ferrari again were the first two in. Previously there had been a protest that the Ferrari were using alcohol. So I took pictures of them taking gas from the regular Mexican pumps.

It was interesting to compare the Italian stops with that of others. When Ascari and Villoresi came in, they stopped the car and casually got out. Ascari scratched his head, yawned, and looked over the car. While the Mexican attendant was putting in gas and wiping off the windshield, he and Villoresi casually raised the hood and checked the oil. Then they easily drove on to the starting line.

When Americans came in, they jumped out of the car, ran around changing tires, yanked up the hood, worked on the engine . . .

After the last car left, I followed. I kept Quinn's Ford around 100 mph (on the speedo) from Parral to Chihuahua (224 miles). At the finish, the last race car finished, then came the pace car, then . . . me.

We drove on to Juarez (224 miles). The crowd was tremendous . . . part of them from the U. S. and part from Mexico. The mob stretched out beyond the finish line for miles. When the cars were sighted by plane and radio telephone, the sirens whined and whistles blew and the crowd moved back off the highway. It was a good thing . . . the way the Ferrari came thru—it was really frightening. I've never seen anything on the road go that fast. It was an asphalt highway which looked very clean, but as the cars came thru, it was just a big cloud of dust. After the race was over, we followed the race cars to the garage, where the first ten were to be inspected. They had templates of factory cams and were comparing them with the cams in the car—this being the only thing that had to remain stock in the engine. That night we went to a banquet and dance given for the winners. What a hassel!

BILLINGSLEY'S ADVENTURE

As you step out of the Airline Terminal in Mexico City, a cab starter directs you to an innocent looking sedan, extracts from you eight pesos (88c U.S.), and gives the un-uniformed driver dubious directions. I wondered at the lack of a special paint scheme on the taxis, not even a sign on the door . . .

As our incognito cab leapt into the confused traffic pattern, the youthful operator . . . this Taxi Nuvolari, took a new interest in life and we went hurtling thru the car-bus-truck-taxi-people-cart clogged criss-cross streets at 80-90 kph. It was like riding as passenger in a stock car race with a crowded field . . . only worse—for here cross-traffic added to the excitement.

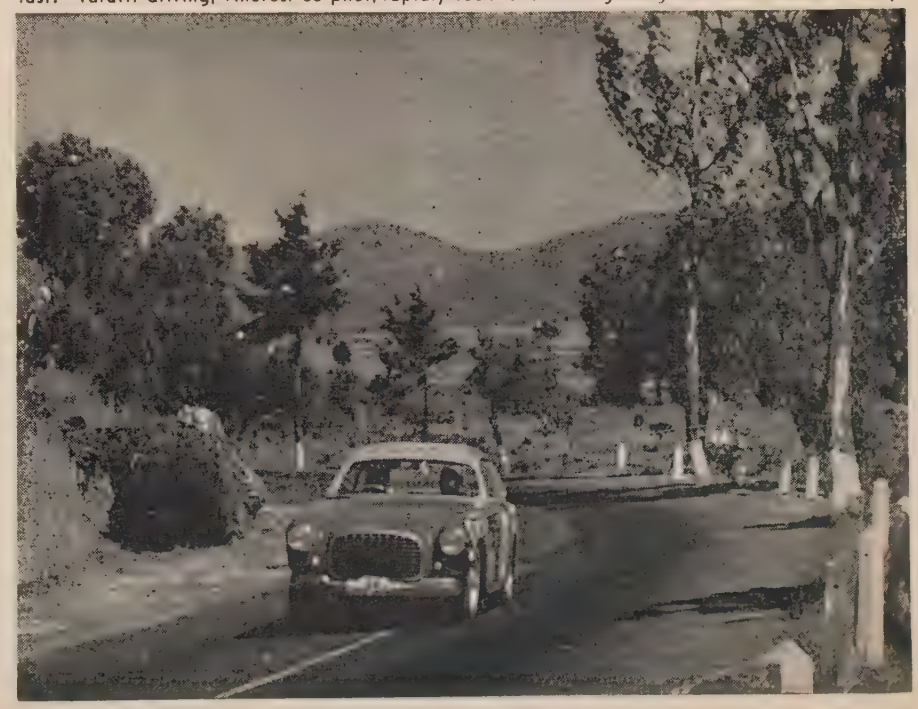
The real fun, however, took place at monument-centered traffic circles (and M.C. is full of them), where four streams of charging vehicles became a mad merry-go-round. Cosmopolitan Mexicans drive very close (all four sides) and these motorized maypoles have been known to get so tight that several concentric circles of fast-moving cars become locked in place . . . around and around they go! It's a lot like the first turn in a road race—and Tazio Gonzales continually captured the lead until we arrived at the Hotel Monte Cassino. I gave him

(Continued on page 46)

Chiron (Delahaye) was running well up among leaders until disqualification at Puebla start.

". . . protests of Italians using alcohol, so I took photos of them using Super Mexolina pump."

". . . the way the Ferrari came thru was frightening . . . never seen anything on the road that fast!" Taruffi driving, Villoresi co-pilot, rapidly took lead after getting new tires in Mexico City.



Starting Line-Up

Car No.	Driver	Make
1	Marin	Ch
2	Sennett	O
3	Burany	Ch
4	Chiron	D
5	Gonzalez	Ch
6	Matthews	Ch
7	Bettenhausen	Ch
8	Fedricks	Ch
9	Ascari	F
10	Martinez	B
11	Faulkner	L
12	Byron	H
13	Patterson	H
14	Cayon	Ch
15	Ruttman	M
16	Sterling	Ch
17	Bretto	FO
18	Ehlinger	P
19	Panini	A
20	Flores	P
21	Zulueta	O
22	Johnson	Ch
23	Fleming	O
24	L. Leal	H
25	Easton	H
26	Duran	B
27	Del Campo	O
28	C. D. Evans	N
29	Solana	O
30	Ramirez	O
31	J. Evans	Ch
32	Fitch	Ch
33	Rogers	Ca
34	Taruffi	F
35	Roberts	H
36	Matamoros	O
37	Lopez	H
38	Scully	M
39	Walters	Ch
40	Trimble	O
41	Estrada	P
42	Esparza	Fo
43	Breton	Ch
44	Teague	H
45	Cerda	O
46	Ibarra	P
47	F. Razo	J
48	Trevoux	P
49	Korf	N
50	Rocha	O
51	Fluchaire	H
52	Rojas	Ca
53	Warriner	Ch
54	Crawford	L
55	Urueta	P
56	Paredes	H
57	Carcer	Ca
58	Alvarado	M
59	Paz	O
60	Perez	O
61	Lucero	O
62	Corona	P
63	Anza	M
64	Garibay	B
65	Lopez	O
66	Inciarte	M
67	Vera	O
68	Christie	N
69	Uribe	—
70	J. Dos Santos	S
71	Cagnasso	S
72	McFee	Ch
73	Gonzalez	B
74	Bradley	N
75	Babineau	H
76	Gago	—
77	Duenas	S
78	Fernandez	O
79	McGriff	O
80	Fano	S
81	Garza	O
82	Diaz	H
83	Suarez	O
84	Dominguez	Ch
85	Cepeda	O
86	*	—
87	Francis	P
88	J. Razo	L
89	McAfee	Ca
90	Unser	J
91	Bonetto	La
92	McMillan	O
93	Limon	H
94	Rachid	H
95	Coonis	Fo
96	Gray	O
97	Salvi	O
98	Barragan	M
99	Chafardet	S
100	Sarten	Ca
101	Bracco	La
102	Luz	N
103	Pearson	O
104	Jensen	H
105	Oviedo	Ca

*Entry from Estado de Nuevo Leon

Overall Standings First Leg

Car No.	Driver	Make
48	Trevoux	P
15	Ruttman	M
18	Ehlinger	P
49	Korf	N
16	Sterling	Ch
11	Faulkner	L
2	Sennett	O
22	Johnson	Ch
44	Teague	H
29	Solana	O
54	Crawford	L
92	McMillan	O
3	Burany	Ch
104	Jensen	H
34	Taruffi	F
60	Perez	O
33	Rogers	Ca
52	Rojas	Ca
102	Luz	N
40	Trimble	O
58	Alvarado	M
19	T. Panini	A
47	F. Razo	J
27	Del Campo	O
90	J. Unser	J
62	Corona	P
25	Easton	H
1	Marin	Ch
28	C. D. Evans	N
30	Ramirez	O
24	L. Leal	H
4	Chiron	D
96	Gray	O
89	McAfee	Ca
37	Lopez	H
81	Garza	O
105	Oviedo	Ca
103	Pearson	O
67	Vera	O
72	McFee	Ch
71	Cagnasso	S
20	Flores	P
88	J. Razo	L
54	Cerda	O
9	Ascari	F
83	Suarez	O
84	Dominguez	Ch
85	Cepeda	O
55	Urueta	P
50	Rocha	O
68	Christie	N
5	Gonzalez	Ch
99	Chafardet	S
101	Bracco	La
26	Duran	B
59	Paz	O
8	Fedricks	Ca
39	Walters	Ch
53	Warriner	Ch
82	Diaz	H
97	Salvi	O
93	Limon	H
21	Zulueta	O
61	Lucero	O
57	Carcer	Ca
7	Bettenhausen	Ch
70	J. Dos Santos	S
14	Cayon	Ch

14 Cars which did not start:

6	Matthews	Ch
12	Byron	H
35	Roberts	H
38	Scully	M
64	Garibay	B
66	Inciarte	M
69	Uribe	—
73	Gonzalez	B
75	Babineau	H
76	Gago	—
78	Fernandez	O
86	*	—
95	Coonis	Fo
100	Sarten	Ca

Cars disqualified at Oaxaca:

10	Martinez	B
13	Hansen	H
17	Bretto	Fo
23	Fleming	O
31	J. Evans	Ch
32	Fitch	Ch
36	Matamoros	O
41	Estrada	P
42	Esparza	Fo
43	Breton	Ch
46	Ibarra	P
51	Fluchaire	H
56	Paredes	H
63	Anza	M
65	Lopez	O
74	Bradley	N
77	Duenas	S
79	McGriff	O
80	Fano	S
87	Francis	P
91	Bonetto	La
94	Rachid	H
98	Barragan	M
97	Salvi	O
52	Rojas	Ca

Overall Standings Second Leg

Car No.	Driver	Make	Pos. on Leg
15	Ruttman	M	4
18	Ehlinger	P	5
34	Taruffi	F	3
16	Sterling	Ch	12
49	Korf	N	16
48	Trevoux	P	42
22	Johnson	Ch	17
2	Sennett	O	19
11	Faulkner	L	23
54	Crawford	L	14
44	Teague	H	22
29	Solana	O	18
60	Perez	O	7
9	Ascari	F	1
33	Rogers	Ca	20
62	Corona	P	13
89	McAfee	Ca	9
92	McMillan	O	36
47	F. Razo	J	21
58	Alvarado	M	24
40	Trimble	O	26
101	Bracco	La	2
88	J. Razo	L	8
20	Flores	P	10†
96	Gray	O	25
25	Easton	H	31
71	Cagnasso	S	15
1	Marin	Ch	35
28	C. D. Evans	N	37
24	L. Leal	H	39
105	Oviedo	Ca	38
27	Del Campo	O	48
67	Vera	O	34
37	Lopez	H	45
84	Dominguez	Ch	28
55	Urueta	P	30
85	Cepeda	O	41
72	McFee	Ch	47
30	Ramirez	O	51
68	Christie	N	43
5	Gonzalez	Ch	40
81	Garza	O	53
99	Chafardet	S	50
8	Fedricks	Ca	33
53	Warriner	Ch	32
82	Diaz	H	27
21	Zulueta	O	46
93	Limon	H	52
7	B'hausen	Ch	49
61	Lucero	O	54

Cars disqualified at Puebla:

4	Chiron	D
88	J. Razo	L
83	Suarez	O
102	Luz	N
104	Jensen	H
3	Burany	Ch
14	Cayon	Ch
19	Panini	A
26	Duran	B
45	Cerda	O
50	Rocha	O
57	Carcer	Ca
90	J. Unser	J
103	Pearson	O
39	Walters	Ch
59	Paz	O
70	Dos Santos	S

†Denotes tie

Overall Standings Third Leg

Car No.	Driver	Make	Pos. on Leg
15	Ruttman	M	12
18	Ehlinger	P	10
34	Taruffi	F	1
16	Sterling	Ch	13
48	Trevoux	P	6
49	Korf	N	24
11	Faulkner	L	11
2	Sennett	O	17
60	Perez	O	4
29	Solana	O	5
22	Johnson	Ch	29
54	Crawford	L	18
9	Ascari	F	21
44	Teague	H	41
33	Rogers	Ca	9
89	McAfee	Ca	3
62	Corona	P	15
101	Bracco	La	2
92	McMillan	O	33
47	F. Razo	J	28
40	Trimble	O	20
58	Alvarado	M	30
20	Flores	P	14
96	Gray	O	22
71	Cagnasso	S	23
1	Marin	Ch	19
24	L. Leal	H	8
25	Easton	H	38
28	C. D. Evans	N	32
27	Del Campo	O	27
105	Oviedo	Ca	31
67	Vera	O	34
84	Dominguez	Ch	36
37	Lopez	H	42
55	Urueta	P	25
85	Cepeda	O	37
5	Gonzalez	Ch	7
72	McFee	Ch	45
68	Christie	N	40
82	Diaz	H	16
8	Fedricks	Ca	26
99	Chafardet	S	43
93	Limon	H	35
21	Zulueta	O	46
7	B'hausen	Ch	45
61	Lucero	O	46

Disqualified at Mexico, D.F.:

30	Ramirez	O
53	Warriner	Ch
81	Garza	O

Overall Standings Fourth Leg

Car No.	Driver	Make	Pos. on Leg
34	Taruffi	F	2
15	Ruttman	M	8
16	Sterling	Ch	5
48	Trevoux	P	6
9	Ascari	F	1
18	Ehlinger	P	34
49	Korf	N	18
29	Solana	O	9
33	Rogers	Ca	4
22	Johnson	Ch	16
44	Teague	H	7
54	Crawford	L	13
60	Perez	O	24
62	Corona	P	11
92	McMillan	O	22
47	F. Razo	J	25
1	Marin	Ch	12
20	Flores	P	19
96	Gray	O	17
25	Easton	H	15
58	Alvarado	M	30
24	L. Solares	H	21
40	Trimble	O	36
71	Cagnasso	S	28
84	Dominguez	Ch	10
28	C. D. Evans	N	35
27	Del Campo	O	26
105	Oviedo	Ca	32
55	Urueta	P	23
37	Lopez	H	27
5	Gonzalez	Ch	14
67	Vera	O	38
85	Cepeda	O	31
68	Christie	N	33
8	Fedricks	Ca	20
72	McFee	Ch	37
82	Diaz	H	29
99	Chafardet	S	40
7	B'hausen	Ch	3
93	Limon	H	39
21	Zulueta	O	41

Cars disqualified at Leon:

61	Lucero	O
2	Sennett	O
101	Bracco	La
89	McAfee	Ca
11	Faulkner	L

Overall Standings Fifth Leg

Car No.	Driver	Make	Pos. on Leg
34	Taruffi	F	3
15	Ruttman	M	6
9	Ascari	F	1
16	Sterling	Ch	4
48	Trevoux	P	7
44	Teague	H	5
33	Rogers	Ca	8
18	Ehlinger	P	12
29	Solana	O	11
49	Korf	N	15
54	Crawford	L	9
62	Corona	P	11
22	Johnson	Ch	25
96	Gray	O	10
92	McMillan	O	15
20	Flores	P	17
1	Marin	Ch	25
47	F. Razo	J	27
84	Dominguez	Ch	14
25	Easton	H	23
58	Alvarado	M	19
24	L. Solares	H	21
71	Cagnasso	S	18
60	Perez	O	38
40	Trimble	O	31
28	C. D. Evans	N	29
55	Urueta	P	28
27	Del Campo	O	34
67	Vera	O	24
37	Lopez	H	33
105	Oviedo	Ca	35
7	B'hausen	Ch	2
8	Fedricks	Ca	22
68	Christie	N	30
85	Cepeda	O	36
72	McFee	Ch	32
99	Chafardet	S	37
21	Zulueta	O	20
93	Limon	H	38

Cars disqualified at Durango:

5	Gonzalez	Ch
82	Diaz	H

Overall Standings Sixth Leg

Car No.	Driver	Make
34	Taruffi	F
9	Ascari	F
15	Ruttman	M
16	Sterling	Ch
48	Trevoux	P
44	Teague	H
33	A. Rogers	Ca
54	Crawford	L
29	Solana	O
49	Korf	N
62	Corona	P
22	Johnson	Ch
18	Ehlinger	P
96	Gray	O
92	McMillan	O
24	L. Solares	H
84	Dominguez	Ch
60	Perez	O
40	Trimble	O
58	Alvarado	M
71	Cagnasso	S
7	B'hausen	Ch
28	C. D. Evans	N
1	Marin	Ch
67	Vera	O
37	Lopez	H
8	Fedricks	Ca
68	Christie	N
72	McFee	Ch
105	Oviedo	Ca
27	Del Campo	O
85	Cepeda	O
21	Zulueta	O
99	Chafardet	S
93	Limon	H

Cars disqualified at Parral:

25	Easton	H
20	Flores	P
47	Razo	J
55	Urueta	P

LEGEND

Ch—Chrysler
O—Oldsmobile
D—Delahaye
Ca—Cadillac
F—Ferrari
B—Buick
L—Lincoln
H—Hudson
M—Mercury
Fo—Ford
A—Alfa Romeo
P—Packard
N—Nash
J—Jaguar
S—Studebaker
La—Lancia

Overall Standings Seventh Leg

Car No.	Driver	Make	Pos. on Leg
34	Taruffi	F	4
9	Ascari	F	2
15	Ruttman	M	8
16	Sterling	Ch	5
48	Trevoux	P	6
44	Teague	H	3
33	Rogers	Ca	7
54	Crawford	L	9
49	Korf	N	12
29	Solana	O	21
62	Corona	P	13
22	Johnson	Ch	16
96	Gray	O	10
18	Ehlinger	P	14
92	McMillan	O	17
7	B'hausen	Ch	1
24	L. Solares	H	27
84	Dominguez	Ch	25
60	Perez	O	28
58	Alvarado	M	23
40	Trimble	O	24
28	C. D. Evans	N	18
1	Marin	Ch	20
71	Cagnasso	S	33
8	Fedricks	Ca	11
37	Lopez	H	22
68	Christie	N	19
67	Vera	O	30
72	McFee	Ch	15
27	Del Campo	O	9
105	Oviedo	Ca	34
85	Cepeda	O	31
21	Zu'ueta	O	26
99	Chafardet	S	32
93	Limon	H	35

Overall Standings Eighth Leg

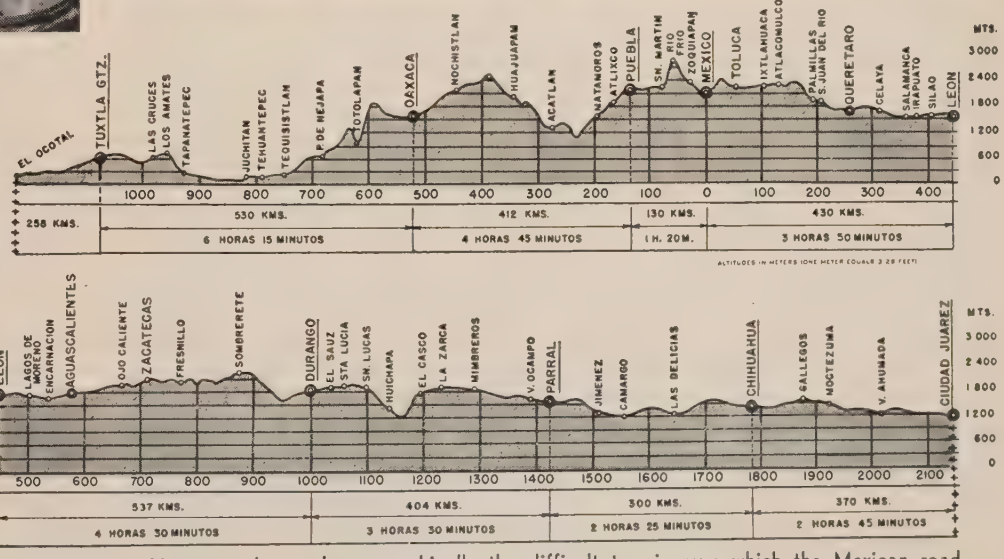
Car No.	Driver	Make	Pos. on Leg
9	Ascari	F	4
34	Taruffi	F	8
16	Sterling	Ch	2
15	Ruttman	M	14
48	Trevoux	P	3
44	Teague	H	9
33	Rogers	Ca	7
54	Crawford	L	11
29	Solana	O	15
49	Korf	N	22†
22	Johnson	Ch	5
62	Corona	P	18
96	Gray	O	19
18	Ehlinger	P	20
92	McMillan	O	21
7	B'hausen	Ch	1
24	L. Solares	H	13
60	Perez	O	10
84	Dominguez	Ch	26
40	Trimble	O	24
58	Alvarado	M	25
1	Marin	Ch	6
28	Evans	N	23
8	Fedricks	Ca	12
71	Cagnasso	S	32
37	Lopez	H	22†
67	Vera	O	16
72	McFee	Ch	17
68	Christie	N	30
27	Del Campo	O	28
85	Cepeda	O	27
105	Oviedo	Ca	31
21	Zulueta	O	29
99	Chafardet	S	34
93	Limon	H	33

†Denotes tie

Ascari, Villoresi, awaiting start at Tuxtla, were plagued by tire trouble, finished 1st leg 45th.

Volpini, European genius, tunes Bonetto-driven Road and Track Lancia in Tuxtla.

Above, Chiron (Delahaye, France) disqualified for starting late after changing tires at Puebla.



The profile map, above, shows graphically the difficult terrain over which the Mexican road race is run. Some competitors had their carburetor jets adjustable from the cockpit in order to compensate for the rapid changes of altitude, even during a single leg. At the first radio check-point of Tehuantepec, the leading cars were the two Lancias, Bracco first, Bonetto second. It would have been interesting to see what they would have done without trouble.

MEXICAN ROAD RACE

(Continued from page 43)

a five peso tip for fastest lap award.

During the many subsequent taxi adventures, I discovered that a terrific amount of crowding-out, cutting in, chopping-off, and out-bluffing took place without anyone getting angry . . . or even disturbed. In Los Angeles, such antics would have led to mass murder, but here it was taken good-naturedly. The pedestrian situation was also very strange . . . as a motorist you completely ignored them . . . men, women, children, pretty girls; it seemed against the custom to even slow down for any of them . . . and they tried to ignore you . . . except for an occasional leap-for-life. The near-miss seemed to be fashionable.

Then it dawned on me! **Bullfighting . . .** the national sport . . . this was the **mechanized** version. Everyone imagined himself the Toreador . . . all other traffic constituted the "bulls". Wow, what a sport! I began to get the spirit . . . you, the hero, giving clever battle to thousands of charging bulls . . . displaying grace, skill, calmness, and complete disdain for the advisory. Say, this was real fun.

Downtown parking presented another riddle . . . long rows or cars were parked solidly—bumper against bumper for whole blocks. How did they get in this mess? Did they drive up parade-style and park one after the other? And how did one get out? This problem so fascinated me that I waited for someone leave. A side-walk fire-eater and two organ grinders later, an Oldsmobile 88 owner unlocked his trapped steed, fired up, and engaged reverse. Very slowly the entire line of some dozen-odd cars began to move back—like a switch engine with a string of box cars. An occasional crash-bang announced a case of over-ridden bumpers. When sufficient movement had been made, Oldsmobile Pancho took off.

Altho the majority of Mexico's cars are U. S. makes, a wide variety of European models are to be seen. Very high import duty on automobiles plus restrictions on foreign ownership of industrial organizations has resulted in strange bed-fellow among the Mexican-owned automotive assembly plants One company (Automatriz de Mexico, S A.) assembles Hudson, Willys, Renault, and White trucks under the same roof. Other combinations are: Packard, Hillman, Mack, Federal—GM products, Opel—Nash, Studebaker, Chrysler, Austin—Crosley, Reo. Ford, Mercury, Consul, Prefect. Fiat is completing plans for assembly in Mexico, while Volkswagen and Morris are known to be eyeing the market. Quite a few Skodas and Tatraplan are on the streets . . . I rode in a Tatraplan taxi . . . There are quite a few pre-war German cars—Opel, DKW, Mercedes, Auto Union, BMW, and Adler. A beautiful Chapron-bodied Delage was seen along with a wire-wheeled Jaguar Mark V. MGs are not infrequent and there an XK-120 or so. A new Alfa dealer will add 1900's to the present 2.5 litre Alfas around town. At the airport, we saw a German Gutbrod three-wheel two-cycle station wagon.

While admiring a Ghia Fiat 1400 sedan, I was offered a ride by the owner. Specially tuned, this little gem fairly screamed down Reforma. Workmanship was superb.

Oh, yes, the Panhard . . . my nose was poked into the unusual innards of this two-cylinder Frenchman when salesman Clevarie appeared to answer my many questions. After the intriguing design had been thoroly explored, I was invited for a "spin around the block" . . . which turned out to be a 15-mile road race over the Carrera Panamericana route. Wound up tight at 65 mph, we were dashing around, thru, and under the wild truck-bus traffic on the narrow twisting road. Passing on blind corners and sliding hairpin turns made it quite a demonstration. The performance and smoothness were remarkable . . . all the more so when provided by two cylinders.

At the finish line in Mexico City, the American cars came in with a rumble, the Ferrari with a snarl, and the Lancia with a fast crackle.

Having read and written about the foreign drivers, I was anxious to meet them. My impressions were:

TARUFFI . . . quiet manners and graying hair are symbolic of the calm precision with which he drives and the keen scientific knowledge which he possesses, for Taruffi is an engineer of note.

ASCARI . . . despite his 32 years, he has the appearance of a college football star His outward calm covers a high-keyed temperament. [Ferrari team driver]

VILLORESI . . . the driver who has the appearance, bearing and manners of a nobleman or diplomat. You can't help liking and admiring this cool Grand Prix master. Villoresi's precise thinking is evident in his almost accentless pronunciation of his sparse English. [Ferrari team driver]

BONETTO . . . a cordial handshake backed by an arm of steel brings you in contact with a broad smile and a warm personality. Bonetto lives and breathes racing, fine cars, and affairs automotive. [Alfa team driver.]

CHINETTI . . . the ultimate cool character—he is equally calm and unconcerned whether the subject be racing, women, or money. A shrug followed by a friendly smile solves most situations. [Driver, Ferrari rep. for No. America]

BRACCO . . . a handsome effervescent optomist with twinkling eyes. Happy over everything and sad over nothing, the world is his friend. His motto: drive flat-out . . . if it holds together you win!

CORNACCHIA . . . like meeting Bob Hope in disguise. His full-blown humor (and figure) keeps everyone in a good mood. When the occasion demands, he can direct matters in a very efficient manner. Spoke no English and called R&T "trek-trock." [Team mgr. . . . sports car driver . . . Ferrari rep. N. Italy]

CHIRON . . . a real son of France—debonaire, enthusiastic, and a real sportsman. Louis has an intense love for racing which kindles new ideas and inspires new ideals. Just talking to him brings to mind the exciting tales of daring French drivers.

TREVOUX . . . has that rare (among drivers) look of an athlete. Dignity and quiet are mixed with ardent enthusiasm for all things automotive.

The tempo for the 2nd Carrera Panamericana Mexico was set by the appearance of champions: Alberto Ascari, Champion of Italy; Tony Bettenhausen, Champion of U. S.; Luis Solares, Champion of Mexico; Arnaldo Alvarado, Champion of Peru; Red Byron, 1948 modified stock Champion (NASCAR); Attilio Cagnasso, Champion of Venezuela; numerous sectional champions; Burany, Woodard, Hansen, Ruttman, Johnson, Sennett, Trimble, Easton, and others.

Adding excitement and glamour to the race's roster of entrants were such names as Luigi Villoresi (Italy), one of the greatest road-race drivers in the world; Walt Faulkner, holder of the Indianapolis Speedway lap record; C. D. Evans "World's Safest Driver" (4,000,000 miles without an accident); John Fitch and Phil Walters, two of North America's greatest sports car drivers; Piero Taruffi (Italy), winner of many European events; Marshall Teague, famous U. S. Hudson Hornet driver; Jean Trevoux, one of France's foremost road-race drivers; Henry Bradley, Peruvian-nationalized Briton; Hershel McGriff, last year's Mexican Road Race winner; Jack McAfee, last year's 10th place winner and well-known West Coast sports car driver; Felice Bonetto, a household name among Italian drivers; and Gianfranco Volpini, designer/builder of the famous Volpini 500 cc car (September R & T).

Among the interesting cars were, of course, the two Ferrari 2.6 litre sedans; the two Lancia Aurelia, carrying the Gran Turismo bodies; Duran and Campos' 1938 Buick (oldest car in race); Chiron's 1951 Delahaye; Ruttman's Clay Smith-prepared Mercury; Teresa (one of two girl entrants) Panini's 2.5 litre Alfa Romeo; numerous Cadillac, Olds, Chrysler and Studebaker V-8s—all vying for top honors, and extremely rapid Packards (prepared by Howard Johansen) and Hudson Hornets.

Mention must be made of the particular type of terrain over which the race was run . . . high mountains, deserts, jungles—in fact, everything which could prove a true road test of a car was encountered before the last leg was finished. The temperature was lower this year—a blessing to overstressed equipment.

The starting line was located in the ancient town of Tuxtla, in the State of Chiapas,—a town dating back to and beyond the Cortez conquest of Mexico.

THE RACE

FIRST DAY

Tuxtla to Oaxaca, 329 miles.

The 93 cars got away smoothly at one minute intervals, heading onto the good but extremely twisting and hilly road. The surface of this leg of the Pan-American Highway was partially surfaced with volcanic rock, which literally ground the tires to shreds. The much looked-forward-to performance of the Italian Ferrari did not appear because of this tire wear (9 tires). Taruffi tied for 14th with Wayne Jensen's Hudson, while Ascari was way back in 45th place—between two Oldsmobiles!

Trevoux, the first leg winner, showed his road experience by bringing his '51 Packard around the curves in masterly fashion. After seeing the performance of the Packards, Chinetti expressed his opinion that they were the best-handling American cars present.

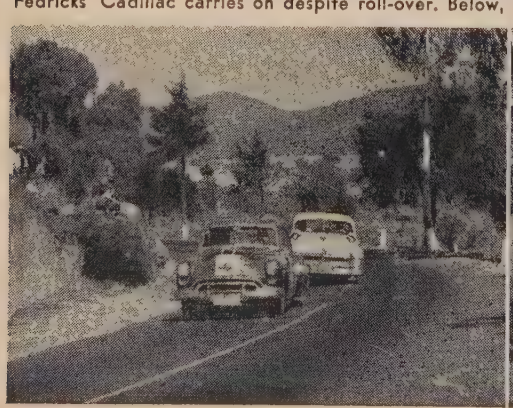
Another Packard driven by Menocal and Gonzalez missed a turn and went off an embankment, with fatal results to both drivers.

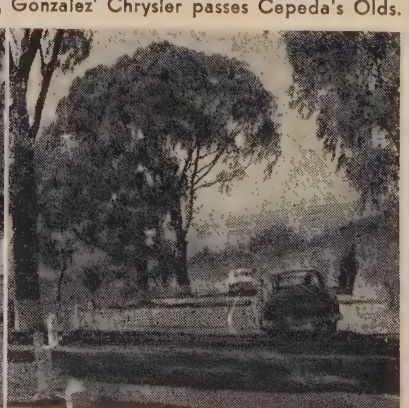
Breaking into the headlines was Troy Ruttman in his Mercury coupe. Highly paraded in the U. S. press as "a second-hand car which Ruttman bought on a used car lot," and "Troy Ruttman's second-hand Ford," the car was actually one of the most beautifully prepared and driven cars in the race—superbly modified by Clay Smith (Long Beach) and driven in such a style that Ferrari has invited Ruttman to join their team for next season's Grand Prix competition.

The pace car (Nash Healey, driven by Stevenson) started with enough leeway (or so the judges thought) to keep out ahead of the pack. Times had increased so much over last year that soon the pace car occupants saw the leading car approaching in a very business-like fashion. The pacers poured on the coal, but the first place car kept coming on. More coal . . . but the gap narrowed. Finally the pursuing car was within a stone's throw. The pace car was by then flat out—or nearly so—and the next corner proved to be too sharp. The Nash Healey dumped over and the race cars thundered by.

Ironic accident of the entire race was McGriff's (last year's winner) Olds 88 which began to manifest a "strong gasoline odor when we reached 110 mph and had passed five cars." The Olds accelerator stuck as flames began to appear under the hood. Somehow McGriff and his co-driver Jim Thompson got the car slowed down to 90 mph and then opened the doors

Fedricks' Cadillac carries on despite roll-over. Below, Gonzalez' Chrysler passes Cepeda's Olds.





which slowed them even more. At 30 mph both contestants jumped clear and the car ran off into the ditch where it burned itself out. "If we'd had even a cup of water when we first saw the flames, we could have saved the car," Hershel lamented as he contemplated "selling the car in Mexico City at a fire sale —the hottest car in town!" Next year's rules will undoubtedly include a clause concerning fire extinguishers.

Jacqueline Evans, screen and radio actress, driving a '51 Chrysler, got into a turn very fast, spun and hit the bank, bending the car too badly to continue.

Engine trouble and mechanical failure hit hard as the cars (15 in all) began to go out. Many of them were as hot as the mechanics could get them, and some were too far overstressed. A good object lesson was provided by Bradley and Tellado (Peru) when they rolled their '51 Nash Ambassador into a creek at top speed. The Nash ended the maneuver beyond recognition as an automobile—completely crumpled. The two Peruvians, having bolted the seats tight to the frame, were wearing stout safety belts and good crash helmets. Result: very slight injuries.

Meanwhile the race went on, the drivers indicating that lap records would be broken all the way down the line. Fitch and Williams ('51 full-race Chrysler Saratoga) were disqualified when mechanical trouble held them up. The two Lancia started strong, Bracco's car being the fastest in the race as far as the first village a few miles North of the start—but here his troubles began. A fuel line came adrift and when that was repaired, tire failure edged him back to 54th. Bonetto blew a headgasket on his Lancia and the water got into the block, effectively immobilizing the car.

The Jaguar MK VIIs ran consistently, despite tire trouble to finish the leg 23rd and 25th, headed by Miss Panini (22nd), doing a man's job in her Alfa Romeo.

The cars flashed across the finish one by one at Oaxaca City, whereupon the drivers and crews (for the most part) began immediate and frantic repairing of their cars. Some whose sedans were in good shape were able to take advantage of the night's rest, preparing themselves for the next day's legs.

SECOND DAY

Oaxaca to Puebla—256 miles.—Puebla to Mexico City—81 miles.

While foreign car fans bit their nails and suffered over the poor Italian showing in the first stages, Americans swelled their chests as Troy Ruttman took the overall lead on the second day—from the Frenchman Trevoux. There was some sentiment at the end of the race against the Gallic racing star. A false rumor had it that he crowded Miss Panini's Alfa off the road (causing it to over turn—an accident which ended fatally for her father, who was driving at the time). The report was completely false . . . Trevoux being one of the world's finest sportsmen. What actually happened was that the Alfa Romeo and a "blue foreign car" got into a corner together. The elder Panini lost control and rolled into the inside of the corner. Trevoux was nowhere near the scene. (nor was Chiron)

Ruttman was overall leader, but Taruffi captured both legs and moved up in the overall from 14th to 3rd. Bracco (Lancia) likewise improved his overall standing from 54th to 18th, and the little car was running like a Swiss watch. Trevoux was passed by Sterling's Chrysler, putting the latter in 4th.

During the half hour lay-over (Puebla), the great Chiron and his Delahaye were disqualified due to a misunderstanding on the Frenchman's part. He was making a tire change behind the starting line, unaware that contestants were allowed to move across the line (thus qualifying) and change their tires "on their own time" and then to continue in the race. Chiron tried valiantly to make the change after buying tires but was seconds late.

In the second leg, one of the Ferrari (Ruttman doesn't know which) passed the Mercury "like I was standing still." In fact, Taruffi started 12 places (or 12 minutes) behind Ruttman and finished seven minutes **ahead** on the second leg, breaking last year's record by 15 minutes for an average of 79 mph. His unofficial average on the next leg was 85 mph . . . really moving up. Ascari, in the other Ferrari, wasn't doing badly either—moving from 45th to 13th (overall) by the end of the second day (and the 3rd leg).

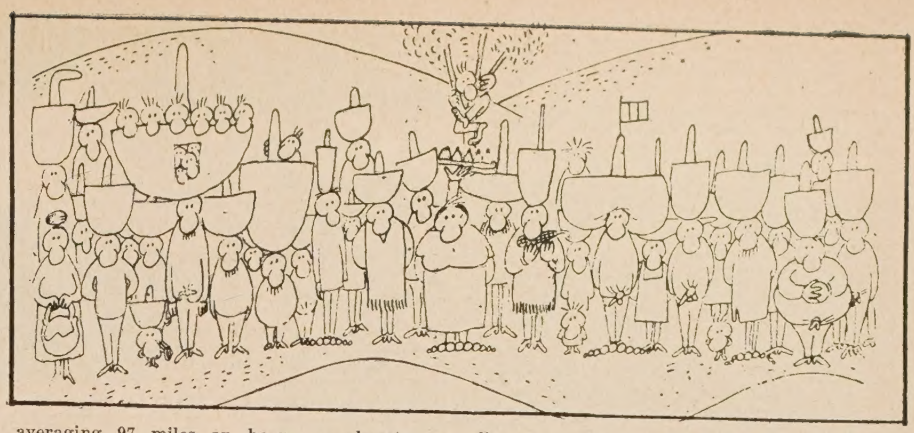
While twenty-three cars went out for one reason or another on the first leg (mostly mechanical troubles), those starting the second lap seemed to have more staying power. Only six went out with mechanical troubles and six were disqualified for slow times.

Burany's Chrysler went off the road, and Carcer (Mexico) flipped his Cadillac. The rest went out with mechanical troubles, while managing to stay on the road.

THIRD DAY

Mexico City to Leon—267 miles.—Leon to Durango—333 miles.

By now Taruffi and Ascari were beginning to get their stride and were running one-two, with Bettenhausen third. Both Italians were



averaging 97 miles an hour, an almost unbelievable speed. Ascari, who started the day in 13th place, was literally burning up the road to join Taruffi, thereby breaking all lap records—15 minutes off the first leg record (from last year) and 21 minutes off the second. Taruffi, while "waiting" for his countryman, trimmed 11 and 17 minutes off these same records (It seems they had to make up a little time).

Among the Italians, Bracco's Lancia spun off the road near Queretaro and was unable to continue—neither Bracco nor his co-driver were injured, but this ended Lancia's hope. By this time, less than half (38) the starting cars were left to continue the race. Car after car was breaking the lap record and the terrific speeds were beginning to tell—or continuing to tell.

The Italians pushed the speeds higher than ever, having stocked up with new tires in Mexico City. Two top contenders dropped out: Faulkner and Sennett (Lincoln and Olds).

First ten overall were, of course, the two Ferrari (1st and 2nd); three Chryslers (3rd, 5th and 10th); one Cadillac (4th); one Packard (6th); one Hudson (7th), and one Mercury (8th). No racing was done on November 23rd. A full day layover in Durango.

FOURTH DAY

Durango to Parral—251 miles.—Parral to Chihauhua—186 miles.

By this time Bettenhausen had full head of steam in his Chrysler in an attempt to catch the fleeting Italians—who were actually backing off . . . feeling sure of their one, two positions. Bettenhausen averaged 110 mph on the Parral-Chihuahua leg in his Chrysler, while Ruttman, maintained his 3rd spot, which is equivalent to handing a bouquet to Clay Smith for his marvelous tuning of the Mercury engine. Ascari (following Taruffi by mere feet) was averaging 107 mph—a good cruising speed for the two Italian cars. And they were just too far out in front for anybody to do anything about it.

Also on this second leg Bill Sterling and twenty-three other drivers broke the 1950 record, showing how much more intense was this year's competition Crawford (Lincoln) was disqualified after the first day but he kept on running and finally convinced the officials he had been wrongly judged and quickly moved into eighth place in the overall (Ford Motor Company ought to do sumpin' for this boy's persistence).

Ninth and tenth in the day's overall finals were Solana (Mexico, Olds) and Korf (U.S.A., Nash). Sterling still held his 4th place, with Trevoux 6th and Al Rogers 7th.

FIFTH DAY

Chihuahua to Juarez—230 miles.

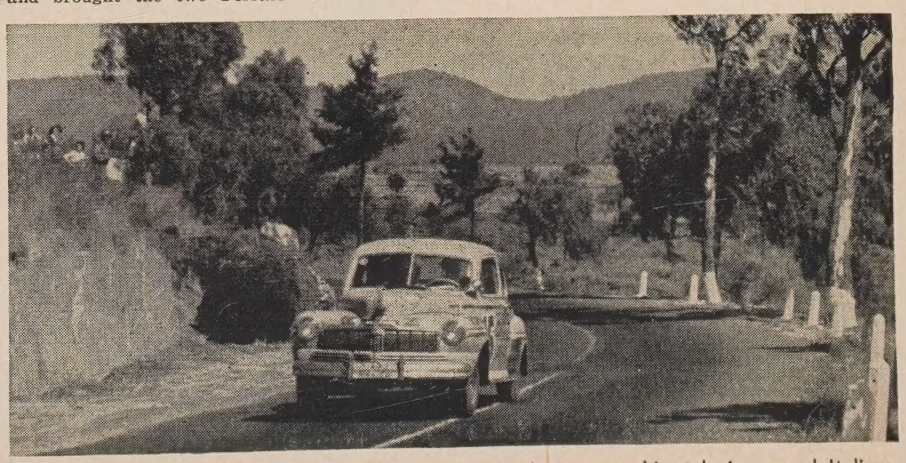
The final leg sewed up the Italian victory and brought the two Ferrari into the finish line at an average speed of 107 mph. Bettenhausen, who was burning up the road, averaged 113 mph but his valiant try still placed him 16th overall and out of the first ten. Sterling, with a high but not scintillating lap-by-lap average, took over third (overall) spot from Ruttman—proving that the best policy is not always to make the fastest lap times. (Somehow one gets to thinking of this year's race as a separate contest, in which the Italians were by themselves out ahead and the other cars raced each other, far behind.) Trevoux's steady driving netted him a well earned 5th in the final.

Prize money was worth anybody's efforts—Taruffi taking home over $23,000 for first and Ascari pocketing nearly $15,000. Lap prizes too, $580 each, were awarded for first place holders on each leg.

There was some comment in Mexico that the race was too dangerous and many held the opinion that the race should not be run next year—on account of accidents. Actually, this feeling was caused and further inflamed by the highly sensational newspaper coverage in the Mexican press—you'd have to read their articles to believe the type of story they print.

Among the drivers, few complaints were heard. Most entrants indicated a desire to compete again next year. And the Mexican Government and the race officials are certainly to be commended for their handling of the race, the drivers, and the press.

Make	Start	Oaxaca	Puebla	Mexico	Leon	Durango	Parral	Chihua	Juarez
Buick	2	1	0	—	—	—	—	—	—
Cadillac	6	6	4	4	3	3	3	3	3
Chrysler	14	11	8	7	7	6	6	6	6
Ford	2	0	—	—	—	—	—	—	—
Hudson	11	7	6	6	6	5	4	4	4
Lincoln	3	3	3	2	1	1	1	1	1
Mercury	4	2	2	2	2	2	2	2	2
Nash	5	4	3	3	3	3	3	3	3
Oldsmobile	23	19	13	11	9	9	9	9	9
Packard	8	5	5	5	5	5	3	3	3
Studebaker	5	3	2	2	2	2	2	2	2
Alfa Romeo	1	1	0	—	—	—	—	—	—
Delahaye	1	1	0	—	—	—	—	—	—
Ferrari	2	2	2	2	2	2	2	2	2
Jaguar	2	2	1	1	1	1	0	—	—
Lancia	2	1	1	1	0	—	—	—	—



Ruttman, Mercury, was particularly good at mountain driving . . . his style impressed Italians.

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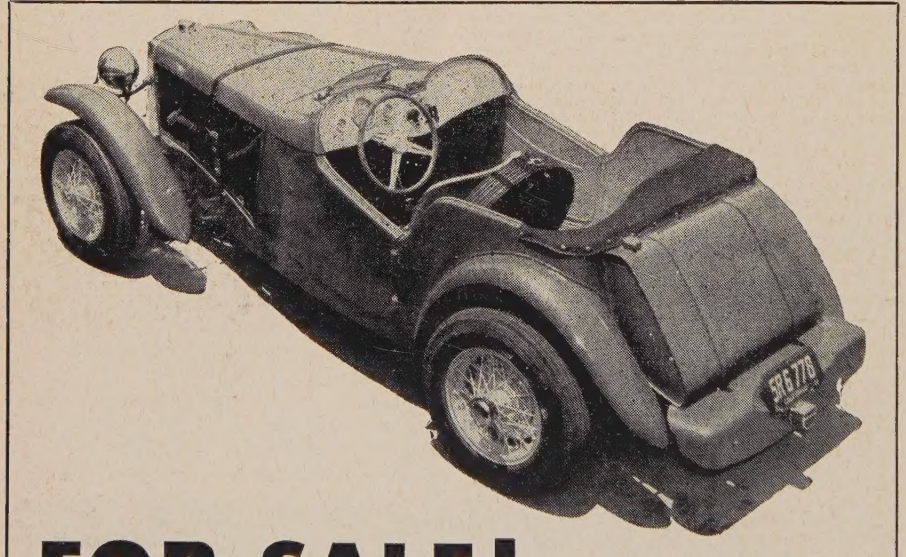

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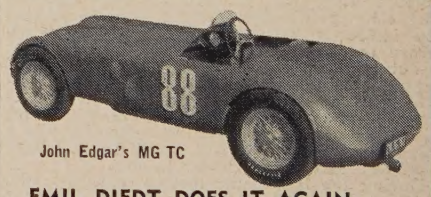

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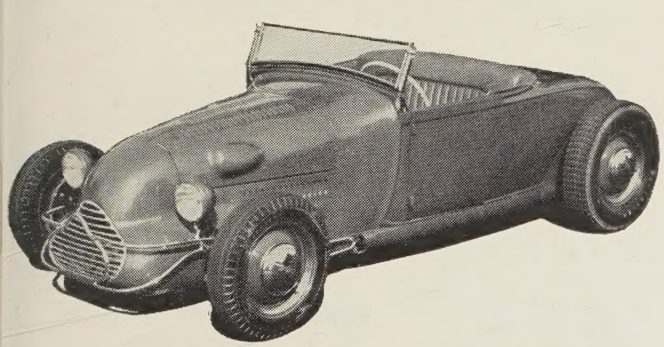
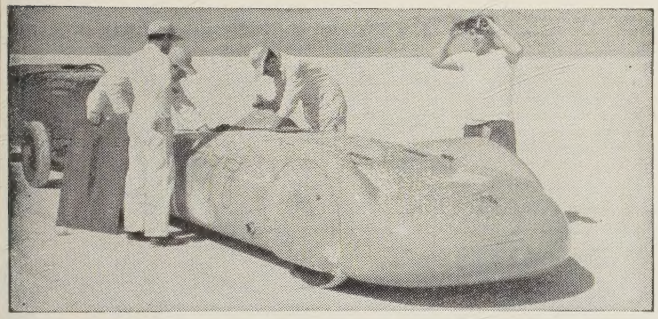
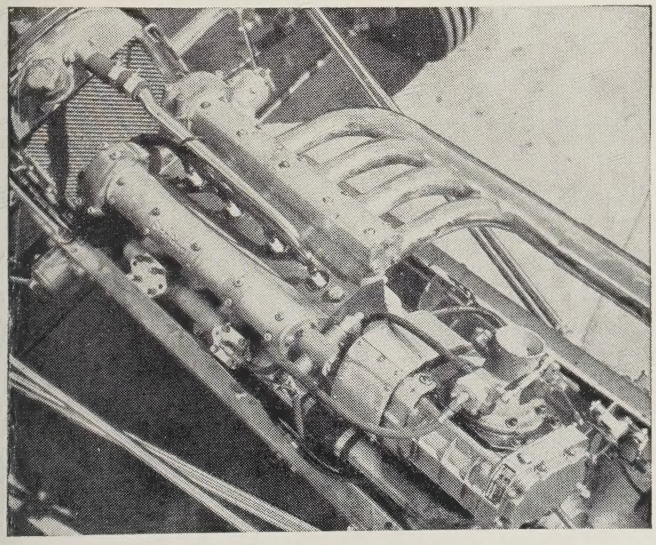
HOP UP QUIZ . . . (answers at bottom of page)



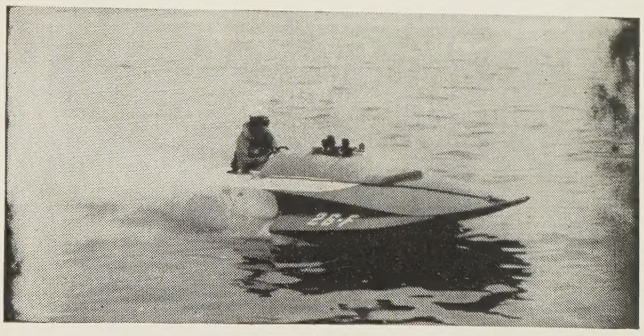
1. This beautiful roadster belonging to Dick Flint weighs
   (a) 2200 lbs. (c) 1900 lbs.
   (b) 2700 lbs. (d) 2400 lbs.



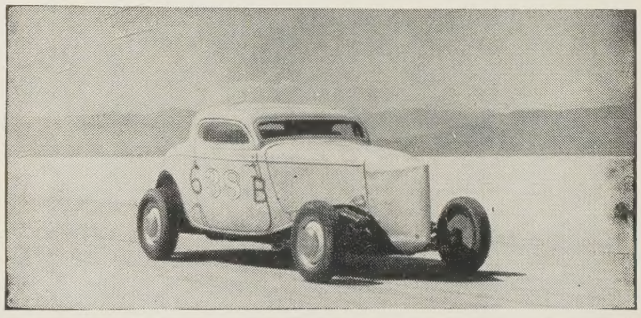
3. This aerodynamic streamliner has turned 230 mph at the last Bonneville meet. Who was driving?
   (a) Troy Ruttman (c) Bill Quinn
   (b) Alberto Ascari (d) Willie Young



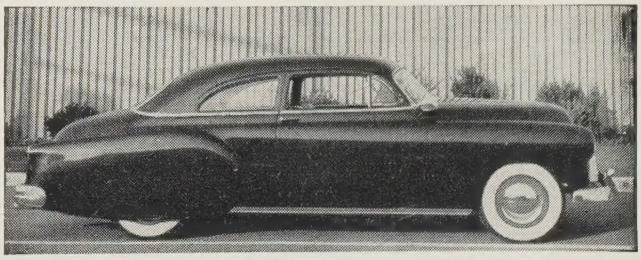
5. This 16-valve, double overhead cam, four-cylinder engine is a . . .
   (a) Offenhauser (c) Ferrari
   (b) Miller (d) Sampson



2. Kenny St. Oegger is running in the same class as Paul Sawyer, who holds the record of 121 mph. The class is . . .
   (a) Crackerbox (c) 135 Hydroplane
   (b) 225 Division I (d) P.O.D.H.



4. Cantley & Sylva's 1934 Ford coupe has turned a top speed of . . .
   (a) 146 mph (c) 97 mph
   (b) 112 mph (d) 160 mph



6. One good example of the clean customs that are in Hop Up is this beautiful . . .
   (a) 1950 Olds (c) 1949 Chevvy
   (b) 1949 Olds (d) 1950 Chevvy

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ANSWERS . . . 1. The answer is (c). For complete details of this roadster, read the Nov. Hop Up. 2. (b) An article on speedboats is featured every month in Hop Up. 3. Willie Young (d) was driving when the Kenz Streamliner turned 230 mph. For full coverage of Bonneville and all dry lake meets, read Hop Up. 4. Cantley and Sylva's coupe turned 146 mph (a) at the last Bonneville meet. Complete results were published in the Nov. Hop Up. 5. An article on this blower, Sampson (d), engine was in the Oct. Hop Up. 6. Carl Cerney's 1949 Chevvy (c) was in the Jan. Hop Up. Also a regular feature of Hop Up is "Custom Hints". Two pages showing you how to customize your car! Subscribe today . . . it's only $1.50 a year and 15c an issue.

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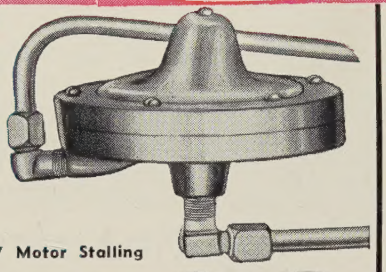

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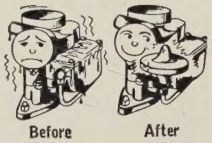

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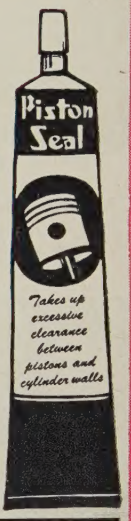

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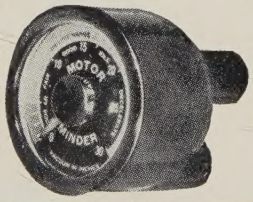

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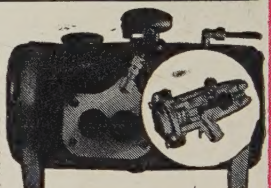

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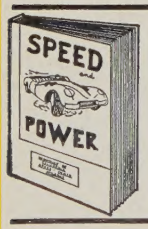

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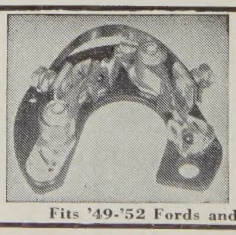

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